

CONSUMERS' RESEARCH

Bulletin



February 1949
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CONSUMERS' RESEARCH



Vol. 23 • No. 2

BULLETIN

February 1949

Off the Editor's Chest

NOW that meat is no longer selling out of the butcher's showcase as fast as he can cut and wrap it, this may be perhaps a good time to pause and consider whether there are other factors besides price that contribute to the consumer's reluctance to purchase meat as eagerly as he once did. As we have pointed out before, meat with an excess of bone, fat, and waste has always been a source of exasperation to the thrifty housewife, and it is doubly so in times of high prices. Two chain stores have attempted to capitalize on this state of mind by advertising that they are more closely trimming meat before it is weighed, but their actual practices in this respect still leave room for a great deal of improvement, from the consumer's standpoint.

It is no doubt natural that the butcher who pays a high price for a side of beef or pork at a flat price wishes to dispose of as little as possible of it in the fat can, and the packer who purchased the animal in the first place also wants to collect full price for every possible pound of live weight. The consumer who doesn't like and couldn't possibly eat all the fat that is customarily sold on a sirloin or porterhouse steak or a loin of pork, for example, is left holding the bag. The place to start correcting the situation is at the point of production on the farm and in the feed lot.

The problem of fat in meat has long been a topic of research by Professor Sleeter Bull and his colleagues at the University of Illinois. As he pointed

out in a study entitled "Wartime Beef Production," made in conjunction with Professor Fred C. Francis and Professor W. E. Carroll, after an animal reaches a certain degree of fatness, any further increase in weight is largely fat, and that fat is, of course, trimmed off and discarded by most consumers. Up to a certain point fattening a steer greatly improves the quality of the beef, but beyond that point fat becomes a money-making device by which the producer in times of bumper corn crops realizes more by feeding corn to meat animals than he could by marketing the corn directly, as grain. Since this year's crop was a whopper, we may expect to find even more than the ordinary amount of surplus fat on animals marketed in the coming year.

The excess fat on pork was the subject of complaint from the British during the war on purchases from the United States under Lend Lease. English meat dealers wanted a 10 percent allowance for the fat which they had to trim off. Judging from the appearance of bacon, currently displayed in local butcher shops, which apparently has been around for some time, U. S. consumers don't like the present variety either, and doubtless for the same reason. The fat hog was once important as a source of lard, but, as one agricultural writer noted, we need less lard at the present time. He suggested that experiments with different breeds might improve on the "embarrassing lardy tendency of swine breeds long accustomed to corn and little

(Continued on page 12)

Scientific and Technical Experts and Editors: F. J. Schlink, R. Joyce, M. C. Phillips, A. R. Greenleaf, Charles L. Bernier, and Dwight C. Aten. **Editorial Assistants:** Mary F. Roberts and B. Beam.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; a quality judgment is independent of price; 48, 49—year in which test was made or information obtained or organized by the staff of Consumers' Research.

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CORRECTIONS TO CONSUMERS' RESEARCH BULLETIN OF
FEBRUARY 1949

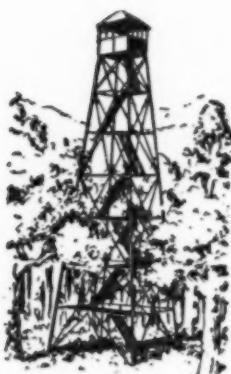
Boosters for
Television Sets
p. 17-18

The Anchor Radio TV Pre-Amplifier, Model 101-50, is available from Sun Radio Co., 124 Duane St., New York City, at a net price of \$22.50.

Loud-Speakers
p. 22
col. 1, 2

The address of James b. Lansing Sound Inc., is 7801 Hayvenhurst Ave., Van Nuys, Calif.
Delete last paragraph of text at top of col. 1, and substitute the following: The prices quoted on the Western Electric and Klipsch speakers are net prices. The consumer net price of the RCA, model LCL1A, is now \$105 for speaker and roll-off network only; \$345 with cabinet.
The Fourth line in the listing of the Altec-Lansing 604b (Fourth Group) should read "RCA LCL1A, Stephensons P52A [not 25A, as printed], and Altec-Lansing 604b."





The Consumers' Observation Post

MEAT FOR BREAKFAST will take you through a busy morning without that let-down feeling that calls for a snack around 10 o'clock. That was the conclusion of Dr. H. V. Soper, writing in *Arizona Medicine*, from a study which he had made over a period of 10 years with 308 persons. Most of them came from the white-collar classes or were housewives. They believed they were eating adequately but thought it wrong to eat meat for breakfast.

Many reported a let-down feeling in mid-morning and mid-afternoon and were so tired when evening came they had to go to bed early. Dr. Soper prescribed a large serving of protein for breakfast, any kind of lean meat, such as steak, chops, chicken, fish, turkey, liver, and found that the use of large servings of meat, fowl, or fish, whether hot or cold, was more effective in building up general health and strength than prolonged therapy with vitamins, iron, liver shots, and minerals.

* * *

SOAPLESS DETERGENTS--the new synthetics--are effective in hard water for laundering clothes, but don't use them on the kitchen linoleum. Laundering tests have shown that where the water is hard, synthetic detergents in most cases will get clothes cleaner than soap. Their efficacy in removing soil and grease, however, makes them quite undesirable for scrubbing linoleum for they tend to remove the oil present, which is needed to keep the linoleum soft and pliable. As Chemical Industries points out, even soap has a drying effect on linoleum and should be carefully washed off. Linoleum requires rather frequent waxing for proper maintenance.

* * *

CORNSTARCH, widely used in paper food containers, paper caps for milk bottles, cottage cheese cartons, and meat-market containers for ground meat and other items, has been known to cause attacks of allergy in corn-sensitive persons, reports Dr. Theron G. Randolph of Northwestern University. Certain brands of processed cheese were found to be wrapped in plastic which had been dusted with cornstarch to make handling easier. The complexity of modern technology certainly makes life a problem for the many persons who suffer from allergy to one or a number of substances.

* * *

FOOD STORED IN FREEZER-LOCKERS must be properly wrapped if it is to be fit to eat later, comments *Air Conditioning and Refrigeration News*. Faulty packaging is held to be responsible for meat that "tasted funny," chickens that turned "dry and gray," and pork that "lost all of its pork flavor." It cannot be too strongly emphasized that meats particularly must be adequately wrapped to be air and vapor tight. Consumers who have had poor results with their own method of wrapping will do well to consult their locker manager or let him do the job.

* * *

CITY SMOKE, CHEMICALLY-TREATED WATER, and other artificial environment factors may favor the development of cancer, in the opinion of Dr. Charles S. Cameron, medical and scientific director of the American Cancer Society. The doctor calls cancer a disease of civilization and points out that there is a rather striking correlation between the degrees of urbanization and the cancer death rate, which is highest in states having the most people living in cities.

* * *

MORE PORK, SHEEP, CHICKEN, AND EGGS will be produced by Iowa farmers this year, but not so much beef, according to a forecast by *The Wall Street Journal*. One of the biggest corn crops in history and resulting low prices for feed encourage a step-up in production of animals and poultry which can be marketed on

a shorter term basis than cattle. Feeder stock which provide the farmers with cattle to fatten for the market are high in price, and some farmers, listening to the talk of rationing and price control out of Washington, D. C., have apparently decided that meat prices will be subject to heavy downward pressure, so they are going to refrain from tying up too much of an investment in beef. This state of mind, fortunately for consumers, apparently does not prevail among farmers generally, for the U. S. Department of Agriculture in a year-end forecast predicted more beef during the coming year with lower prices this spring.

* * *

TOILET TANKS that sometimes run continuously because of the failure of the rubber tank ball to drop squarely upon its seat after the toilet has been flushed are a great annoyance. Adjustment to correct the trouble is often difficult, particularly where the fault is due to the worn condition of parts of the tank leverage mechanism. An easy solution to the problem that will possibly be satisfactory in the great majority of cases is a new type of tank ball with a plastic extension below, with four guide-vanes or fins which lead the ball to its correct seating position. It can be installed in a few minutes and is available under the name Aristocrat (Scully Rubber Mfg. Co., Baltimore) distributed and advertised by Lawrence F. Shesler, 553 Van Cortlandt Park Ave., Yonkers, N. Y., at \$1. (Ordinary toilet tank balls cost from 15c to 75c depending on grade and the type of store from which they are purchased.)

* * *

WHAT DOES THE TERM "QUALITY CONTROL" MEAN? The Federal Trade Commission undertook at least a partial definition in a recent ruling on advertising by American Viscose Corp. which referred to the company's "quality control plan" and urged consumers to look for the labels "crown," "crown tested," and "crown tested and approved." The "quality control plan," the F.T.C. found, was not an established consumer standard and furthermore there are no quality standards generally recognized or used for grading rayon products. Many a woman who has had the unhappy experience of having a rayon fabric melt under the pressure of a hot iron undoubtedly wishes that some standard of performance for washable rayons at least would be developed and fabrics labeled accordingly.

* * *

READING THE LABEL and following the directions thereon for use of the product are strongly urged on consumers. With some items, the homemakers seem to be of the opinion that if a small amount is a good thing, a larger quantity is even better. It just isn't so, complains Soap and Sanitary Chemicals, citing as an example a product which calls for the use of a teaspoonful to a gallon of water for washing painted woodwork and walls. If a woman chooses to use two or three spoonfuls to a gallon of water, and scrubs the woodwork vigorously, she will likely find the paint coming off after a few such treatments. On the other hand, the journal points out, the directions the housewife needs are too often buried in small type beneath "a breath-taking description of what a superlative product" has been bought. Surely some happy medium can be struck.

* * *

KYRON is currently one of the most-advertised reducing preparations. The claims include a reference to "science," promise "safety," and extol the "amazing power" of the product "to help curb excess appetite." Competent medical authorities are pretty generally agreed that the safe, sure way to reduce is by cutting down the amount of food eaten, and the promoters of this nostrum are undoubtedly wise to stress curbing the appetite in their advertising. The Bureau of Investigation of the American Medical Association reported that the preparation consisted of certain vitamins in one tablet, and an amino acid and a digestive in another; both to be taken in conjunction with a low calory diet for which a schedule was provided. The Association's Council on Pharmacy and Chemistry calls the product a placebo, which in non-medical language is defined as "a medicine given for the purpose of pleasing or humoring the patient, rather than for its therapeutic effect." In the Council's opinion, it does not constitute a scientific method for weight reduction caused by overeating.

* * *

THE HIGH COST OF LIVING is having its effect on the size of the tip that people pass out these days. An inquiring reporter on a New York City newspaper

(Continuation of this section is on page 29)

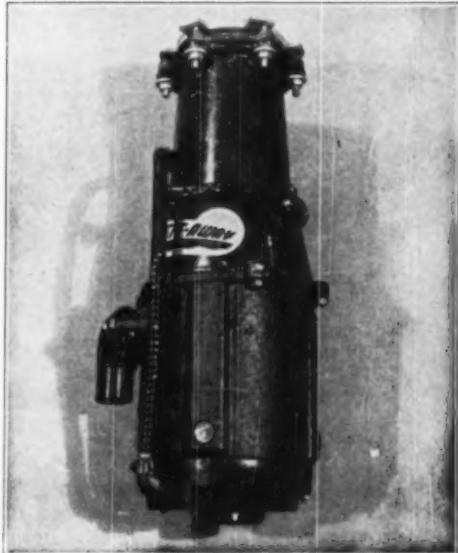
Garbage Disposal Units

MOST HOUSEWIVES would be happy to eliminate the kitchen garbage can and the daily chore of getting rid of its contents, which can be particularly onerous for the rural dweller not served by municipal garbage collections. An answer to the problem is afforded by the increasingly popular electric-powered garbage disposal units, which, although they do not quite eliminate the garbage can (still needed for such items as glass, metal, wax paper, large bones, etc.), will handle and dispose of by far the largest proportion of kitchen wastes.

A garbage disposal unit is a motor-driven grinding device attached at the outlet of the kitchen sink to receive food wastes, grind them into small particles, and flush them into the sewerage system.

Some very important considerations must be resolved by both city and rural dwellers, before any such unit is purchased. City dwellers must determine whether there is any ordinance, or likely to be an ordinance passed, prohibiting the use of such devices. Several communities in the East have banned the use of mechanical disposal units because the discharge of large quantities of chopped-up refuse into already overburdened sewerage systems has created serious problems.

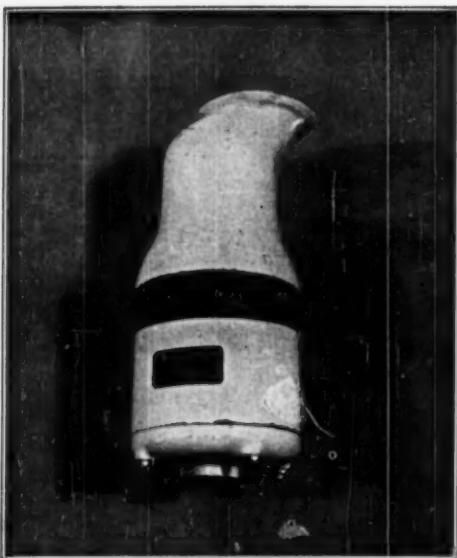
Those who depend on a cesspool or septic tank for disposal of wastes have another problem. Disposal units cannot be used with a cesspool at all, and it is the present view that if used with a septic tank the tank must be at least 50 percent larger than would normally be required. (Two manufacturers of disposal units specify a minimum size of 500 gallons for the septic tank.) Further, the disposal unit should be connected directly to the septic tank and not through a catch basin or grease trap. With municipal sewerage systems, catch basins through which the waste must pass before reaching the sewer are often mandatory. In such cases, the catch basin, unless of unduly large size, will have to be cleaned out frequently (perhaps 3 or 4 times a year), which can be a very unpleasant job, as the contents are likely to be giving off gas. If a professional cleaner is employed for the purpose, the cost will probably be at least \$4 per cleaning, or \$12 to \$16



Waste-Away, Model G-3



Disposall, Model FA-3ER



In-Sink-Erator, Model A-45

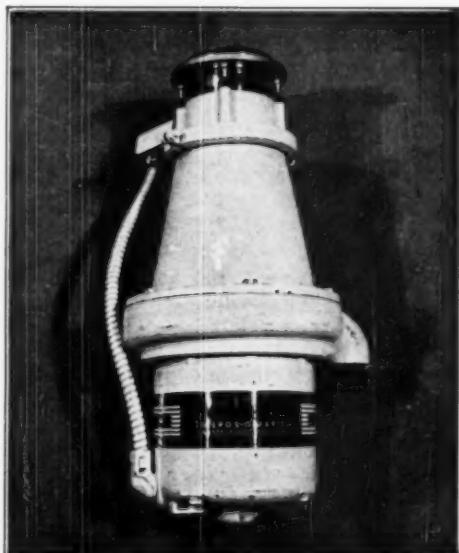
a year, and it may be considerably more. The problem of connecting a waste disposal unit to the sewer or a septic tank may be somewhat complicated, and subscribers are advised to check thoroughly before making a purchase.

Some existing drain systems from the kitchen sink will be too small to handle satisfactorily the waste from these units. Most of the manufacturers of disposal units specify a minimum drain size of 1½-inch diameter with a slope of at least ¼ inch per foot.

As already noted, waste disposal units have certain limitations. In some cases, these are mentioned by the manufacturer in his literature, for example: *Waste-Away* is claimed not to be designed for disposing of metal, glass, clam shells, leather, string, tin foil, rubber, bottle caps, cloth tea bags, china, etc.; *Sani-Way* is claimed not to be designed to "macerate" raw meat and raw bones or to handle metal, glass, crockery, and other non-floating waste; *In-Sink-Erator* is claimed to handle everything but crockery and metal; General Electric comments its *Disposall* will not dispose of metal, glass, ceramics, leather, cloth, string, rubber, and should not be used for cartilage, or clam or oyster shells; *Dispos-O-Matic* is claimed not to deal with large bones, metal, glass, chinaware, leather, cloth, and rubber.

CR's tests included the following: (1) Grinding time for various types of waste; *hard wastes* such as raw lamb bone, cooked lamb bone, egg shells, and pieces of flower pots; *fibrous wastes* such as burdock stalks¹ and corn cobs; *tough wastes* such as chicken feet. (2) Energy (in kilowatt seconds) required for grinding material in the disposal unit was determined for each unit; this, when analyzed, was not considered important since consumption of electrical energy per day would be small in all cases. (3) Fineness of grind. Considered the most important property and given the most weight, since the finer the material is ground the less likely it is to affect plumbing adversely, and fine material will be "reduced" more rapidly in sewage disposal systems. (4) Electrical leakage. As these units when properly installed are solidly grounded, little shock hazard should exist. Proper installation, however, means that all BX cables *must be firmly secured in their connectors* (at both ends) and make good electrical contact with the connectors. The householder should satisfy himself that this has been done carefully and

¹While burdock stalks are not normal kitchen waste, they were used for test purposes because their fibers were similar to that of other kitchen wastes, such as banana peels and corn husks, and they were more readily and inexpensively obtained at the time of the test. Pieces of flower pots, which were easy to break up, were used as a convenient means of checking the fineness of the grind.



Dispos-O-Matic, Model 75

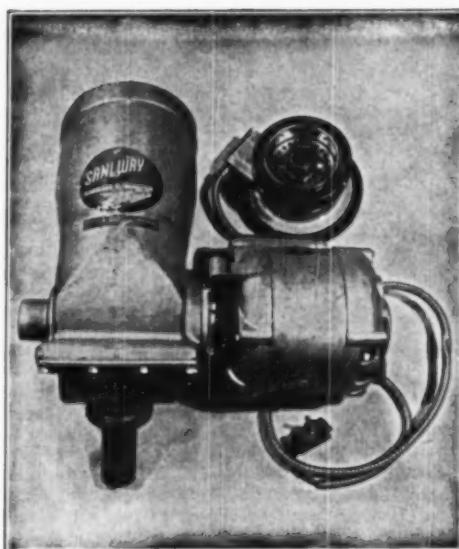
competently. (5) Miscellaneous observations, such as number of times unit stalled, noise of grinding, etc. A tear-down examination of each unit was also made, and the hardness of the grinding elements was measured.

Brief Discussion of Test Results

Some units handled certain types of waste particularly well, but their grinding times varied. For example, the *Sani-Way* was slow with burdock stalks, and the *Disposall* fast, but this situation was reversed when corn cobs were used as the test material. Units using the hammer-mill principle of grinding were all of about the same effectiveness. The *In-Sink-Erator*, which used a different principle (see listings), while effective, was slower than the others. All of the units contained some arrangement for retaining the waste until it was reduced to a definite size, the small flutes of the *Disposall* producing finer particles than the very large holes in the *Sani-Way* strainer plate.

Combination sinks which contain both a waste disposal unit and an automatic dishwasher have in some instances created a serious health and sanitation problem. This arises from the fact that when a stoppage occurs, the contents of the drainage piping or the waste from the disposal unit are likely to — and often do — back up into the dishwasher, contaminating the dishwasher and its contents. The possible results of such a situation are most unpleasant to contemplate, and illness of the most serious nature is, of course, one possible effect. One large city, whose health authorities recognized this danger, has prepared a regulation that requires an emergency overflow between the trap and the dishwasher, so that when a stoppage occurs, the sewage, instead of entering the dishwater unit, will overflow to a point outside the building where it can readily be observed. Then proper steps can be taken to correct the difficulty before contamination of the appliance and its piping occurs. As this sort of hazard becomes more widely known, other cities will probably follow suit in passing suitable regulations or ordinances, although as is usually the case, such steps are not likely to be taken until after an epidemic or a fatality traceable to the action of a disposal unit has occurred.

Several owners of garbage disposal units were interviewed. These persons expressed



Sani-Way, Model 10

complete satisfaction with the appliance; housewives in particular were pleased with the convenient aspects of mechanical disposal of table waste. The most appreciated results of using such units came from owners living in sections where garbage collections were infrequent, as the appliances greatly reduced the problem of rats feeding on decaying garbage.

All units were designed for a.c. at 110-115 volts. Ratings are cr49.

A. Recommended

Waste-Away, Model G-3 (Westinghouse Electric Corp., Electric Appliance Div., Mansfield, Ohio) \$119.50. Equipped with single-phase capacitor-starting type motor (hp. not shown) with built-in overload protection, 6.7 amperes. Grinding rotor (see Figure 1) consisted of a heavy steel flywheel carrying two hardened steel hinged hammers 180° apart. Shredding ring or stator was a hardened steel ring, with a fluted inner face, which with the hammers did the actual grinding. Provided with a water-flow switch which prevented operation unless an adequate supply of cold water was passing through unit. Fineness of grind, very good. Did not tend to stall under load. Completeness of grind, very good. Variety of wastes that could be handled, very

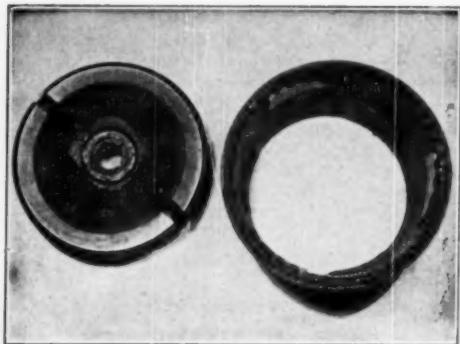


Figure 1 — *Waste-Away*, Model G-3

good. Relatively quiet in operation. Construction very good. Judged to be the best of the 5 units tested. Performance was excellent on all materials used in test, except chicken feet. So far as can be judged without long-time use tests, it is believed that, properly installed and used, this unit should be very satisfactory. 2

B. Intermediate

Disposall, Model FA-3ER (General Electric Co., Bridgeport, Conn.) \$118.75. Equipped with 1/3 hp. single-phase capacitor-starting type motor with built-in overload protection. 5.6 amperes. Grinding rotor (see Figure 2) consisted of a heavy die casting to which was attached a bronze plate drilled with 46 holes, and two hinged aluminum bronze grinding hammers 180°

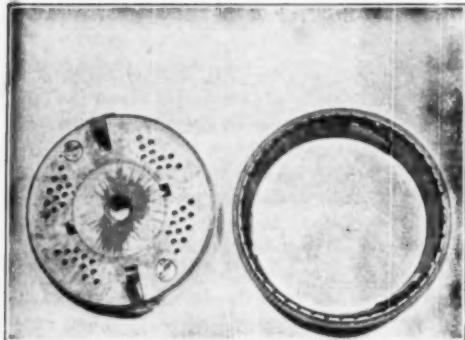


Figure 2 — *Disposall*, Model FA-3ER

apart. Shredding ring or stator was a hardened steel ring with a fluted inner face. Provided with a water-flow switch, similar to *Waste-Away*. Fineness of grind, very good. Did not stall under load. Completeness of grind, lowest of all units tested. Below average in variety of wastes that could be handled well. Relatively quiet in operation. Construction, very good. While

this unit was very similar in design to the *Waste-Away*, its performance was not as good; the poorer action was apparently due to differences in shape and dimensions of grinding elements. It failed to handle raw bone, did not completely grind all materials as well as *Waste-Away*, and required more time. Repairs on this unit are likely to be expensive, as GE do not supply a replacement part (carbon ring) for the lower assembly consisting of motor, seal and grinding rotor, which they consider as a sealed unit that must be replaced as a whole. Any failure in this assembly, however small or inexpensive, involves a replacement of the entire unit, on an exchange basis, at a charge of \$27.50. 2

In-Sink-Erator, Model A-45 (In-Sink-Erator Mfg. Co., Racine, Wis.) \$119.50. Equipped with 1/4 hp. single-phase motor with built-in overload protection. 4.5 amperes. Grinding rotor (see Figure 3) consisted of a cast steel disk of complicated shape having two ribs which distribute the waste to the grinding edges of the sectors which are in the form of steps. The shredding

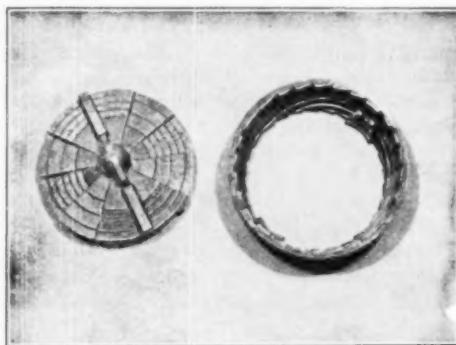


Figure 3 — *In-Sink-Erator*, Model A-45

ring or stator had a complicated arrangement of edged projectors in the form of teeth. Each time unit was started, the direction of rotation automatically reversed, thus eliminating any moderate tendency to jam. The teeth of each successive quadrant faced in opposite directions so that the ring ground the waste when running in either direction. Unit was controlled with a double-pole, single-throw snap switch (not furnished). In series with this hand-operated starting switch were a reversing relay, magnetic starting switch, and overload relay, all built-in, and an aluminum housing on the hopper. Fineness of grind, very good. Some tendency to jam and stall under load; when this occurred, it was difficult to clear the unit. Completeness of grind, fairly good. Variety of wastes which could be handled, very good. Slightly noisy in operation. Construction, fairly good. This unit was the only one tested which operated as a straight grinder and not on the hammer-mill principle. It ground finely, but slowly, in comparison with the others. 2

C. Not Recommended

Dispos-O-Matic, Model 75 (Eureka-Williams Corp., Bloomington, Ill.) \$119.50. Equipped with $\frac{1}{4}$ hp. single-phase motor of split-phase starting type. 5 amperes. Grinding rotor (see Figure 4) consisted of a small hub section to which were pivoted two large bronze hammers, each having a vertical fin to agitate the waste above the rotor. Shredding ring or stator was a strip of stainless steel formed to a circle and punched with numerous L-shaped slots which act as shredding knives. Particle

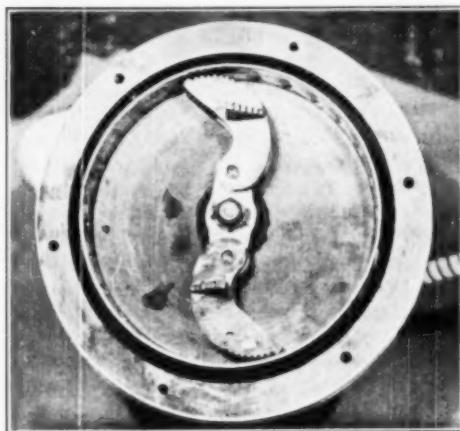


Figure 4 — *Dispos-O-Matic*, Model 75
(Photographed to a different scale than other figures.)

size of ground waste was large but better than *Sani-Way* in this respect. Considerable tendency to stall under load. Completeness of grind, below average. Variety of wastes that could be handled, good. Moderately noisy in operation with some types of material. First unit tested failed by fracture of rotor shaft, but unit was immediately replaced without charge. The new

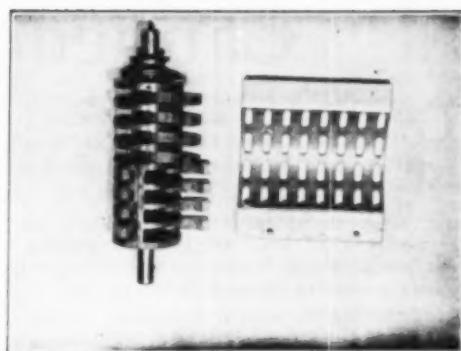


Figure 5 — *Sani-Way*, Model 10

unit had a stronger shaft extension which should eliminate this type of failure. Judged to be not as substantially constructed as other units tested. 2

Sani-Way, Model 10 (Thomas W. Berger, Inc., Cincinnati 2) \$119.50. Equipped with $\frac{1}{4}$ hp. single-phase capacitor-starting type motor, 3.8 amperes. Grinding rotor (see Figure 5) consisted of a steel shaft encased in a rubber cylinder over which was fitted a die-cast slotted cylinder. Each of the 16 slots contained a steel hammer. These were thrown outward by centrifugal force pushing between the teeth of the shredding comb and over the holes in the strainer plate. Controlled by a manually-operated toggle switch and a micro-switch mounted on drain unit. The last-mentioned switch was operated by pushing down the plug section of the drain unit. While fast in operation, the grind was very coarse. Completeness of grind, not too good. Variety of wastes that could be handled, good. Stalled rarely, but when this occurred, the jam was so tight that it was necessary to remove the bottom of the hopper in order to free the grinding rotor. Generally noisy in operation, sometimes extremely so. Performance, fair on most materials. Construction, about average. 2

An FM "Converter"

CR recently tested a device which is being sold as an accessory for converting pre-war FM receivers or tuners (such as the very good *GE Translator*, Model JFM-90) which were designed to operate on the old 42 to 50 megacycle FM band, so that the tuner will operate on the present 88 to 108 megacycle band. The accessory is called *The Crystal FM Converter*, Model 1002A, and was manufactured by the Crystal Devices Co., 1819 Broadway, New York City; the selling price was \$6. While tests showed that the converter worked, its operation was successful only with high signal

strengths, and this factor would usually limit its use to local reception only. Another important disadvantage was that in cases where the old-band tuner or receiver did not tune above 52 megacycles, it would be necessary to realign the tuner so that it could be tuned to a slightly higher frequency range; this change would be needed to permit the old tuner to cover the whole of today's 88 to 108 mc. band. For these reasons, anyone who might want to consider connecting a *Converter* to permit use of a pre-war tuner would, we believe, be well advised to buy on a trial basis, with written money-back guarantee.

Canned Tomatoes

CANNED TOMATOES can be used in a great number of tasty food dishes, and it is not surprising that they are one of the most popular canned foods. The housewife can use whole tomatoes or pieces according to the recipe she is planning to use, and in some recipes the tomato juice may be as important an ingredient as the tomatoes themselves.

According to federal definition, canned tomatoes are of red or reddish varieties which are peeled and cored, to which may be added one or more optional ingredients. The optional ingredients include: (1) the liquid drained from such tomatoes during or after peeling or coring; (2) the liquid strained from the residue from preparing such tomatoes for canning, consisting of peeling and cores with or without whole tomatoes or pieces; and (3) the liquid strained from mature tomatoes. To meet governmental requirements, when optional ingredient (2) is present, the label should bear the statement, "With Added Strained Residual Tomato Material from Preparation for Canning." When optional ingredient (3) is present, the label should declare "With Added Strained Tomatoes."

Purified calcium chloride, calcium sulfate, calcium citrate, and monocalcium phosphate, or any two or more of these calcium salts also may be added to the tomatoes in amounts small enough that the calcium present will not exceed 0.026 percent of the weight of the finished canned tomatoes. When this is done, the label should carry a statement that calcium salt or salts are present or name the particular salt or salts added. The salts named are added for the purpose of firming the tomatoes. Studies have shown calcium salts to be effective for this use, but there has been some suggestion that the addition of a calcium salt may also hide defects in tomatoes otherwise overripe or beyond the satisfactory stage for processing. CR is not in a position to express an informed opinion on the desirability or undesirability of these salts from the standpoint of possible harm to consumers' health. It seems likely that such harm, if it could occur, would not be of great significance.

The government grades for canned tomatoes are: *Fancy* (Grade A), *Extra Standard* (Grade B), and *Standard* (Grade C). There is also a

below-Grade-C quality known as *Substandard*. Tomatoes must be whole or practically whole in a can in order to qualify as *U. S. Fancy* (Grade A), and they must have a good red color and be practically free from defects which would ordinarily be removed in the careful preparation of tomatoes for culinary use. The drained weight must be not less than 66 percent of the capacity of the can.

U. S. Extra Standard (Grade B) canned tomatoes can be in large pieces, and the drained weight is required to be not less than 58 percent. *U. S. Standard* (Grade C) canned tomatoes must have a drained weight of not less than 50 percent the capacity of the can and may consist of small or large pieces, with or without whole or almost whole tomatoes. They should be fairly red in color and free from defects. *Standard* grade tomatoes are of low quality, but they are edible food (though somewhat mushy or juicy) and for some uses may prove as satisfactory as other grades.

Substandard tomatoes are such as have failed to meet the requirements for other grades.

The listings marked sg47 indicate gradings made by a state government in 1947. Other ratings are cr49, except as noted. Price per pound appears in parentheses after the price per can.

A. Recommended

Chimes (Distributed by Pratt-Low Preserving Co., Santa Clara, Calif.) 1 lb. 12 oz., 36c (20.3c). Labeled "Solid pack tomatoes with added trace of calcium chloride."

Drained weight, 20½ oz. Graded *Fancy* (Grade A). **2**

Finast (Distributed by First National Stores, Inc., Somerville, Mass.) 1 lb. 3 oz., 23c (19.4c). Labeled "Tomatoes with added tomato juice." Tomatoes were whole. Drained weight, 15 oz. Graded *Fancy* (Grade A). **2**

Iris (Distributed by Haas, Baruch & Co., Los Angeles) 1 lb. 12 oz., 32c (18.3c). Labeled "Fancy Solid Pack Peeled Tomatoes with added trace of calcium chloride." Drained weight, 20 oz. Graded *Fancy* (Grade A). **2**

S & W (Distributed by S & W Fine Foods, Inc., San Francisco) 1 lb. 12 oz., 36c (20.3c). Labeled "Hand packed, peeled tomatoes, trace of calcium salt added, seasoned with salt." Drained weight, 21 oz. Graded *Fancy* (Grade A). **2**

Stokely's (Distributed by Stokely-Van Camp, Inc., Indianapolis) First sample: 1 lb. 3 oz., 24c (20.2c). Labeled "Especially selected tomatoes with added tomato juice, trace of calcium salt added." Drained weight, 13 oz. Graded *Fancy* (Grade A). Second

sample: 15½ oz., 21c (21.6c). Drained weight, 12 oz. Graded *Fancy* (Grade A). (A third sample, graded *Extra Standard* [Grade B], received a *B* rating.) 2 *F and P* (Packed by Filice & Perrelli Canning Co., Inc., Richmond, Calif.) 1 lb. 3 oz., 25c (21c). Labeled "Selected fancy hand-peeled solid pack tomatoes. Trace of calcium chloride added." Drained weight, 15 oz. Graded *Fancy* (Grade A). 3 *Libby's* (Packed by Libby, McNeill & Libby, San Francisco) 1 lb. 3 oz., 25c (21c). Labeled "Peeled tomatoes with added tomato juice and trace of calcium salt." Drained weight, 15½ oz. Graded *Fancy* (Grade A). 3 *Royal* (Royal Canning Co., Ogden, Utah) 1 lb. 3 oz. Graded *Fancy* (Grade A). *sg47*

B. Intermediate

Flotill (Packed by Flotill Products, Inc., Stockton and Modesto, Calif.) 1 lb. 12 oz., 23c (13.1c). Labeled "Fancy solid pack, peeled tomatoes, trace of calcium chloride added." Drained weight, 20½ oz. Graded *Extra Standard* (Grade B). 1 *Gardenside* (Packed by Regent Canfood Co., San Francisco) 1 lb. 12 oz., 19c (10.8c). Labeled "With added strained residual tomato material from preparation for canning; trace of calcium chloride added." Drained weight, 17½ oz. Graded *Extra Standard* (Grade B). 1 *Heirloom* (Packed by S. J. Miller Packing Co., Grand Junction, Colo.) 1 lb. 3 oz., 18c (15.2c). Labeled "Extra Standard Grade with added strained tomatoes." Drained weight, 12 oz. Graded *Extra Standard* (Grade B). 1 *Highway* (Packed by Table Products Co., Oakland, Calif.) 1 lb. 12 oz., 20c (11.4c). Labeled "With added tomato juice and trace of calcium chloride." Drained weight, 19½ oz. Graded *Extra Standard* (Grade B). A second sample of this brand will be found under *C. Not Recommended*. 1 *Kent Farm* (Packed by Albert W. Sisk & Son, Preston and Aberdeen, Md.) 1 lb. 3 oz., 17c (14.3c). Drained weight, 12 oz. Graded *Extra Standard* (Grade B). 1 *Break O'Day* (Break O'Day Cooperative Canning Co., Jasper, Ind.) 1 lb. 3 oz., 19c (16c). Drained weight, 13½ oz. Graded *Extra Standard* (Grade B). A second sample graded *Standard* (Grade C). 2 *Cosmos* (Packed by S & W Fine Foods, Inc.) 1 lb. 12 oz., 29c (16.5c). Labeled "Standard quality, with added strained residual tomato material from preparation for canning, trace of calcium chloride added." Drained weight, 18 oz. Graded *Extra Standard* (Grade B). 2 *Defiance* (Packed by Assoc. Food Distributors, Inc., Coldwater, Mich.) 1 lb. 3 oz., 21c (17.7c). Drained weight, 14 oz. Graded *Extra Standard* (Grade B). 2 *King's Gate* (Packed by Regent Canfood Co.) 1 lb. 3 oz., 19c (16c). Labeled "With added tomato juice; trace of calcium chloride added." Drained weight, 15 oz. Graded *Extra Standard* (Grade B). 2 *Sultana*, Grade B (Packed by The Great Atlantic & Pacific Tea Co., New York City) 1 lb. 3 oz., 19c, or two for 37c (16c). Drained weight, 15 oz. Graded *Extra Standard* (Grade B). 2 *Hunt's* (Packed by Hunt Foods, Inc., Los Angeles) 7½ oz., 12c (25.6c). Labeled "Solid pack tomatoes with

added trace of calcium salt." Drained weight, 5½ oz. Graded *Extra Standard* (Grade B). 3 *Premier* (Distributed by Francis H. Leggett & Co., N.Y.C.) 10 oz., 18c (28.8c). Labeled "Hand-packed peeled tomatoes." Drained weight, 12½ oz. Graded *Extra Standard* (Grade B). 3 *Stokely's* (Distributed by Stokely-Van Camp, Inc.) 1 lb. 3 oz., 25c (21c). Labeled "Especially selected tomatoes with added tomato juice, trace of calcium chloride added." Drained weight, 12 oz. Graded *Extra Standard* (Grade B). Two other samples graded *Fancy* (Grade A). 3 *Sweet William* (John Mitchers Inc., Windfall, Ind.) 1 lb. 3 oz. Graded *Extra Standard* (Grade B). *sg47*

C. Not Recommended

Break O'Day (Break O'Day Cooperative Canning Co.) 1 lb. 3 oz., 15c, or two for 29c (12.6c). Drained weight, 10½ oz. Graded *Standard* (Grade C). Another sample graded *Extra Standard* (Grade B). 1 *Farmdale* (Distributed by American Stores Co., Philadelphia) 1 lb. 3 oz., 18c (15.2c). Drained weight, 11½ oz. Graded *Standard* (Grade C). 1 *Highway* (Distributed by Regent Canfood Co.) 1 lb. 3 oz., 17c, or two for 33c (14.3c). Drained weight, 9½ oz. Graded *Substandard*, because of low drained weight. (Another sample of this brand received a *B* rating [Grade B].) 1 *Iona* (Distributed by The Great Atlantic & Pacific Tea Co.) First sample: 1 lb. 3 oz., 15c, two for 29c (12.6c). Labeled "Standard Quality, Grade C." Drained weight, 11 oz. Graded *Standard* (Grade C). Second sample: 1 lb. 3 oz., 14c, or two for 27c (11.8c). Drained weight, 11½ oz. Graded *Standard* (Grade C), because of low drained weight. 1 *Kuner's* (Packed by Kuner-Empson Co., Brighton, Colo.) 1 lb. 12 oz., 22c (12.6c). Labeled "Vine-ripened, whole or in pieces without added liquid, trace of calcium chloride added to help retain wholeness." Drained weight, 10½ oz. Graded *Substandard*, because of low drained weight. 1 *Pine Cone* (Packed by Albert W. Sisk & Son) 1 lb. 3 oz., 13c (11c). Drained weight, 10 oz. Graded *Substandard*, because of low drained weight. 1 *Wharton's Pride* (Packed by Wharton Canning Co., Huntsville, Ark.) 1 lb. 3 oz., 15c (12.6c). Drained weight, 11 oz. Graded *Substandard*, because contents were off color. 1 *Asco* (Distributed by American Stores Co.) 1 lb. 3 oz., 21c (17.7c). Labeled "Selected hand packed tomatoes." Drained weight, 11½ oz. Graded *Standard* (Grade C). 2 *Del Monte* (Packed by California Packing Corp., San Francisco) One sample: 1 lb. 3 oz., 25c (21c). Labeled "Peeled tomatoes with added tomato juice and trace of calcium salt." Drained weight, 9½ oz. Graded *Substandard*, because of low drained weight. Second sample: 1 lb. 3 oz., 22c (18.5c). Labeled "Peeled tomatoes with added tomato juice." Drained weight, 11½ oz. Graded *Standard* (Grade C). 2 *Golden B* (Packed by Box Elder Packing Corp., Brigham City, Utah) 1 lb. 3 oz., 21c (17.7c). Drained weight, 11½ oz. Graded *Standard* (Grade C). 2 *Plymouth Maid* (Packed by Plymouth Packing Co., Inc., Indianapolis) 1 lb. 3 oz., 19c (16c). Labeled

"With added tomato juice, trace of calcium chloride added." Drained weight, 10 oz. Graded *Substandard*, because of low drained weight. ²

Richmond (Distributed by First National Stores Inc.) 1 lb. 3 oz., 19c (16c). Drained weight, 10½ oz. Graded *Substandard* because of excess peel. ²

Spring Bird (Packed for S. Kahn's Sons, Inc., Evansville, Ind.) 1 lb. 3 oz., 20c (16.8c). Drained weight, 10½ oz. Graded *Standard* (Grade C). ²

Yacht Club (Distributed by Reid, Murdoch & Co., Chicago) 1 lb. 3 oz., 23c (19.4c). Labeled "Flavored with salt, packed in tomato juice." Drained weight, 11½ oz. Graded *Standard* (Grade C). ²

Anderson's (Anderson Canning & Pickle Co., Chaska, Minn.) 1 lb. 3 oz. Graded *Standard* (Grade C) because of short weight and below-standard fill. sg47

Baron (Baron Canning Co., Westville, Okla.) 1 lb. 3 oz. Graded *Substandard*. Had excessive defects and low drained weight. sg47

Bear Creek (Oxford Canning Co., Harriston, Ark.) 1 lb. 3 oz. Graded *Standard* (Grade C). sg47

Big Smith (Smith Canning Co., Fayetteville, Ark.) 1 lb. 3 oz. Graded *Substandard*, due to low drained weight. sg47

Dinner Time, Grade A (Security Wholesale Groc. Co., St. Paul) 1 lb. 3 oz. Graded *Standard* (Grade C). Misbranded as to grade. sg47

Smith's Beauty (Smith's Canning Co.) 1 lb. 3 oz. Three samples graded *Standard* (Grade C); four samples graded *Substandard*, due to low drained weight (two of these four samples also showed excessive defects). sg47

Steele's (Steele Canning Co., Springdale, Ark.) 1 lb. 3 oz. Graded *Substandard*, due to excessive defects and low drained weight. sg47

Stonewall (Griggs Cooper & Co., Fargo, N. Dak.) 1 lb. 3 oz. Graded *Standard* (Grade C). sg47

* * *

Shipments of the following brands were subject to action by the Food and Drug Administration because they were misbranded, adulterated, contained decomposed material, or because they were found to be below a U. S. Standard and were not so labeled, according to Notices of Judgment for 1948. These notices gave essential details of cases instituted against products which were held to be in violation of the Federal Food, Drug, and Cosmetic Act.

Alpena, Baron, Big Smith, Blue and White, Bob White, Cheerio, Concho, Connecticut's Pride, Dubon, Elm, Forked Deer, Golden Harvest, Grapeland, Green Vale, Hartco, Harvest Pride, Hopewell, Kent Farm, King of Ozarks, King of the Field, Kinsale, Made to Eat, Marco, Mariposa, Mayflower, Nancy Lee, Ozark Chief, Peace River, Pride, Pure Food, Red-Glo, Red Aces, Red Raven, Rich-West, Ridgefield, Royal Red, Smith's Beauty, Spring Creek, Staff-O-Life, Steele's, Summer Girl, Twin Brand, Western Star, White River Valley, Wife's Pride, Willow Brook

Off the Editor's Chest

(Continued from page 2)

else." In his comment, however, he did not take account of the fact that pork producers prefer to market corn as fat, and will continue to do so until consumers' unwillingness to buy meat that carries large amounts of unusable fat is strongly indicated by falling sales.

There was a time when the consumer was made to feel that the farmer had such a hard life that anything which added to his burdens or increased his difficulty in earning a living was like taking pennies from a poor man, but the average farm family, as everyone knows, is not in that position nowadays. In fact, the present administration is committed to a continuation of, perhaps even an increase in, a guarantee of farm parity prices, which has been defined as a level of prices designed to give farmers a purchasing power equal to that of a previous period that was particularly favorable for agriculture. The taxpayer foots the bill for government-maintained parity prices in two ways; once, when his tax dollars are used by the Treasury for subsidizing the farmers on certain products (including corn), and second, in the butcher shop when he pays high prices for meat and other essential food products. It would therefore seem only elementary justice that he be protected against having

to pay for unwanted material, that, in a word, he should get something for his money in the way of the desired quality of product.

With respect to meat, that definitely means leaner cuts. The U. S. Department of Agriculture under the Research and Marketing Act of 1946 has been empowered by Congress to find broader markets for farm products and already has started a number of studies of consumer preferences. Consumer preference for less fat is already known to every butcher and every housewife and restaurateur, but we can think of no research more acceptable to the retail purchaser than a study reporting frankly and fully on how much less fat consumers would like to see on cuts of beef such as porterhouse and sirloin steak, bacon, loin of pork, chops, and ham; followed by researches on the kind of feeding practices to be followed to produce meat more nearly like the desired type. Then a concerted effort will need to be made by the propaganda experts of the U. S. Department of Agriculture—of which there are a number—to persuade the producers to supply the market with the leaner, more desirable cattle, sheep, and hogs that the meat trades and their customers want.

THREE OR FOUR dozen diapers are estimated to be the minimum number that a baby should have to keep him comfortable, and five or six dozen are even better. Diapers are more expensive nowadays than formerly. The prices of the diapers tested ranged from about 20 cents to 85 cents each, and the minimum number may cost \$6 or as much as \$30.

Diapers should be soft, absorbent, strong enough to hold up in use, and not too bulky, because deformities of the thighs may result if the diapers make too great a bulk between the legs. Pinking of the edges is an advantage; this method of finishing the edges helps to make the diapers less bulky and easier to wash.

The diapers included in this study were made of six different fabrics: *birdseye cloth, flat knit, rib knit, flannelette, gauze, and birds-eye gauze.*

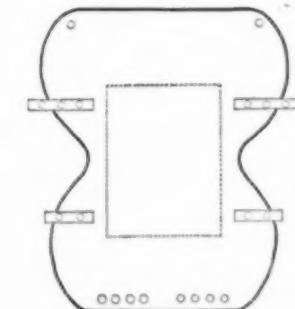
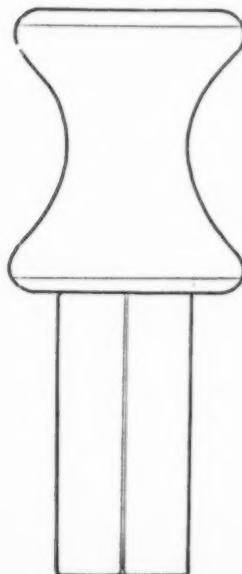
Birdseye cloth has a distinctive weave with a small geometric pattern resembling a bird's eyes. It is absorbent, and to meet Federal Specifications should weigh no less than four ounces per square yard and have a thread count not less than 60 in the warp direction and 44 in the filling direction. Except where noted, all the birdseye cloth diapers tested met these standards.

The birdseye cloth diapers tested had, as a group, the highest tensile strength, higher than

Diapers

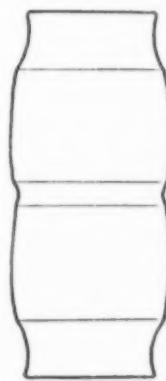
most of the knit materials and considerably higher than the flannelette and gauze diapers. The weakest diaper tested in this respect, however, was the *Swiss Knit* diaper; this had a breaking strength of only 18 pounds in the wale direction and 10 in the course direction. It is to be expected that the stronger fabrics will have a longer life than those which are weak in tensile strength, and may be expected to withstand the effects of repeated washings better. Other factors, such as the lighter weight of gauze diapers or the shape of some knit diapers, for example, may outweigh this factor for some mothers.

Knitted diapers, contrary to what might be believed, are not always heavier than the other kinds, but they are slower in drying. In spite of this disadvantage, some mothers prefer them because they consider them easier to use and because they take less space on the clothesline, a factor which can be very important in these days of inadequate housing. On the other



Pinfree
Two layers of birdseye cloth sewn together at edges and bound with white bias tape. An absorbent pad (6 x 9 inches) of two layers of birdseye cloth was sewn in between the layers. Snap fasteners provided for closing and size adjustment.

← - *Carter's, No. 2*
The hour-glass shaped portion was made of two layers of fine flat-knit fabric stitch-bound at the edges and reinforced at the ends with twilled tape. The rectangular panel is of a coarser rib knit fabric that is folded double as shown.



Post-rose
A tubular-knit diaper with stitch-bound open ends. The narrowed portions were made of a fabric knit finer than the rest of the diaper.

hand, other diapers which dry faster can be placed one on top of the other on the line, and space can be saved in that way.

There are, so far as CR knows, no specifications for diapers other than that for the birdseye cloth ones mentioned, and authorities differ as to what is the best size and the most usable shape. They do agree, however, that since diapers are worn by babies 24 hours a day for 12 to 15 months, or even longer, they should be as comfortable as possible.

In CR's tests, diapers of each brand were dried after they had been wetted and passed through a washing machine wringer. The diapers were weighed wet and at intervals during the drying period; it was found that slow- and fast-drying ones could be easily differentiated. All of the knit diapers were slow in drying, and all the gauze diapers were fast-drying.

The moisture absorption of the diapers was given the greatest weight in rating them. Percentage total absorption and localized absorption were considered of almost equal importance. Total moisture absorption was calculated after weighing the diaper dry and weighing it wet, after it had passed through a washing machine wringer. Localized absorption was determined by allowing water to drop from a capillary tube at the rate of about one drop per second on a diaper laid over the mouth of a large glass vessel. These drops were counted until a drop of water fell from the underside of the sample being tested. The larger the number of drops absorbed, the more rapid the water absorption. Three tests were made on each sample.

In addition to the tests and examinations already mentioned, counts were made of the threads of the woven fabrics and the wales and courses of the knitted fabrics. Average breaking strengths were determined, and shrinkage was measured. Shrinkage was found small enough to be considered unimportant except in the cases noted in the listings. A limited series of observations were also made as to the practicability of using the diapers unironed. All the diapers were judged to be satisfactory in this respect except one, the *Swissknit*, which "balled up" badly in washing, and required much handling to make usable. The *Pinfree* diapers had a row of snaps on a tape that "corded" in laundering and might prove troublesome in use unless ironed.

Prices are those paid for the diapers, except for the *Sears and Ward's* which are those given in the catalogs now current. Ratings are cr49.

A. Recommended

Pant-ease (Pant-Ease Infant Wear Co., Arcade, N.Y.) \$3 per dozen. Small size. Rib knit fabric, some sections knitted coarser than others (see illustration); ends bound. $20\frac{1}{2} \times 8$ in. Weight per sq. yd., 6.8 oz. Slow in drying. Amount of moisture absorbed, good. Water absorption in localized absorption test, good. Diaper changed in shape in washing; it was about 4 in. shorter and $1\frac{1}{2}$ in. wider after washing. Shrinkage was considered excessive. 1

Sears (Sears-Roebuck's Cat. No. 29-5027) \$2.39, plus postage, per dozen. Flannelette; hemmed and selvage edges. $25\frac{1}{4} \times 27$ in. Breaking strength in filling direction judged somewhat low. Weight per sq. yd., 3.3 oz. Drying time, short. Amount of moisture absorbed, very good, best of diapers tested. Rate of absorption, very good, one of the two best tested. 1

Chix (Chicopee Sales Corp., N.Y.C.) \$3.50 per dozen. Two layers of gauze; pinked and selvage edges. $19\frac{1}{2} \times 39\frac{1}{2}$ in. Weight per sq. yd., 1.7 oz. Drying time, short. Moisture absorption, good. Rate of absorption, fair. 2

B. Intermediate

Erwin Birdseye (Distributed by W. T. Grant stores) \$2.98 per dozen. Birdseye cloth; hemmed and selvage edges. $26 \times 26\frac{1}{2}$ in. Weight per sq. yd., 4.2 oz. Drying time, short. Moisture absorption, fair. Rate of absorption, fair. 1

Honeysuckle Birdseye (Sears-Roebuck's Cat. No. 29-5053) \$2.89, plus postage, per dozen. Birdseye cloth; hemmed and selvage edges. 26×27 in. Weight per sq. yd., 3.3 oz. (low for birdseye cloth diapers). Drying time, short. Moisture absorption, good. Rate of absorption, poor. 1

Ward's (Montgomery Ward's Cat. No. 31-615) \$2.59, plus postage, per dozen. Knit fabric; stitch-bound edges. $24\frac{1}{4} \times 10\frac{1}{2}$ in. Weight per sq. yd., 6.4 oz. Slow in drying. Moisture absorption, fair. Rate of absorption, very good, one of two best tested. 1

Curity (Kendall Mills, Walpole, Mass.) \$3.50 per dozen. Two layers of square-woven gauze; pinked and selvage edges. $19\frac{1}{2} \times 39\frac{1}{2}$ in. Weight per sq. yd., 1.8 oz. Drying time, short. Moisture absorption, good. Rate of absorption, poor. 2

Carter's, No. 2 (Wm. Carter Co., Dayton, Ohio) \$10.20 per dozen. Two layers of rib knit fabric, shaped; panel of coarser knit fabric attached to one end (see illustration); stitch-bound edges. 17×13 in., shaped. Weight of fabrics per sq. yd., 9 oz. and 3.6 oz. Slow in drying. Moisture absorption, fair. Rate of absorption, good. 3

Pinfree (Sold by Carson, Pirie, & Scott, Chicago) \$6.76 per dozen. Two layers of birdseye cloth, shaped and sewn together and bound with white bias tape. Eight

snap fasteners across front and one on each side of the back provided for closing and size adjustment (see illustration). Pad of two layers of birdseye sewn in between the layers. Cotton tapes with snap fasteners attached to each side of leg opening. 17 x 12 in. Thread count was little too low to meet Federal Specification in filling direction. Weight per sq. yd., 4.7 oz. Slow in drying. Moisture absorption, poor. Rate of absorption, good. Shrinkage, somewhat high. **3**

C. Not Recommended

Baby Dumpling (Deering-Milliken Co.) \$2.69 per dozen. Birdseye cloth; hemmed and selvage edges. 26 1/4 x 27 in. Weight per sq. yd., 4 oz. Drying time, short. Moisture absorption, fair. Rate of absorption, poor. **1**

Super Dides (Marsales Co., Inc., N.Y.C.) \$1.99 per dozen. Two layers of square-woven gauze; stitch

bound and selvage edges. 20 x 39 in. Breaking strength, judged low in filling direction. Drying time, short. Weight per sq. yd., 1.3 oz. Moisture absorption, good. Rate of absorption, poor. **1**

Swissknit (Swissknit Mfg. Co., Inc.) \$1.99 per dozen. Four layers flat-knit fabric; stitch-bound edges. 22 1/2 x 10 1/4 in. Breaking strength, judged low in course direction. Weight per sq. yd., 1.8 oz. Relatively slow in drying. Moisture absorption, poor. Rate of absorption, fair. Shrinkage, excessive in both directions. **1**

Ward's Birdseye (Montgomery Ward's Cat. No. 31-606) \$2.89, plus postage, per dozen. Birdseye cloth; hemmed and selvage edges. 25 1/4 x 26 1/2 in. Weight per sq. yd., 4.5 oz. Drying time, short. Moisture absorption, fair. Rate of absorption, poor. Shrinkage, somewhat high. **1**

Output Transformers for Audio Amplifiers

BECAUSE the quality of the output transformer is vital to the faithful reproduction of music by a radio set or power amplifier (badly skimped output transformers being the rule rather than the exception), CR some time ago conducted comparative tests on four output transformers of high standing in the industry, designed for use with triode power tubes such as the 6B4, 6A3, or 2A3. Test results indicated that the expensive transformers were superior to the less expensive ones, both with regard to the flatness of the frequency response curve and the range over which the power output was at an acceptable level. (The latter is a very important point.) The two medium-priced transformers gave good performance considering their cost and size, however, and could be used to advantage in low-cost triode amplifiers. (See p. 31 of Aug. '48 BULLETIN.) Their response was dependent upon the output impedance used, and in this respect, the superiority of the higher-priced transformers was quite evident. In the listings which follow, the *A* ratings of

transformers of the less expensive type apply only if plate currents are closely balanced in a push-pull arrangement.

For the test, an amplifier was constructed using 6B4 tubes in push-pull in the output stage. It was so connected that it could easily be changed from self-bias to fixed-bias operation in class AB₁. (It is believed that either transformer would perform satisfactorily when used with a pair of 6L6 "beam-power" tubes connected for class A operation.)

A. Recommended

Audio Development Company, Type 314C (Audio Development Co., 2833 13th Ave. S., Minneapolis) \$20.04. When used with an amplifier connected for either fixed-bias or self-bias operation, the output was substantially flat (± 1 db.) from the very low to extremely high (inaudible) audio frequencies, and the range was considered entirely adequate for true high-fidelity reproduction. This transformer was considered slightly superior to the *U.T.C.*, Type LS-55. **AA3**

U.T.C., Type LS-55 (United Transformer Corp., 150 Varick St., New York 13) \$16.46. When used with an amplifier connected for either fixed-bias or self-bias operation, the output, like that of *Audio De-*

velopment Company 314C was substantially flat from the very low to the very high audio frequencies, not far below the limit of audibility. The lower-priced (\$10.95) *Model LS-57* is about the same as *LS-55*, except that it does not include the 500 ohm winding. **3**

• • •

The following two transformers, while recommended, are not on a par as to performance with the two listed above.

Thordarson T-22S70 (Thordarson, 500 W. Huron St., Chicago 10) \$4.53. When used with an amplifier connected for self-bias operation, the power output curve was quite flat (down a maximum of 3 watts from 12) from 50 to 18,000 cycles. The measured frequency response using the 8-ohm impedance tap was far better than the response obtained using the 500-ohm tap, and for this reason, the *Thordarson* is considered slightly superior to the *Stancor A-3800*. **1**

Stancor A-3800 (Standard Transformer Corp., Chicago 18) \$4.65. When used similarly to the *Thordarson T-22S70* above, the power output curve was quite flat (down a maximum of 3 watts from 12) from 40 to 9000 cycles (using the 8-ohm output impedance tap). (The 500-ohm tap, which showed a much flatter frequency response curve, has little likelihood of being used in consumers' high-fidelity setups.) **1**

Cactus Phonograph Needles

ONE of the most controversial subjects among record fanciers is the question of minimizing record wear through the choice of needles. For many years, collectors have felt that fiber (cactus or thorn) needles were superior to other needles in this respect, and choice used albums have been offered for sale with the notation, "thorn played," implying that the records are offered in exceptionally good condition.

As a matter of fact, the fiber needle, being very soft, wears quickly to the shape of the record groove; in this condition it collects abrasive dust, and the resulting scouring action damages the record. In tests made by Consumers' Research, however, the fiber needles tested appeared to wear records somewhat less severely than steel needles in the same number of plays. Steel needles in previous tests caused less record wear than precious metal alloy needles or jewel-tipped needles. This result (observed but not measured) appeared to be valid even when the cactus needles were played until they were blunt.

The blunting of the tip is seen in Figure 1. The tip is completely worn out of any proper shape for its work before one play of a 12-inch disk is completed, and the needle must then be resharpened before another record is played.

Sharpening is done either with a piece of abrasive paper furnished with the needles by the manufacturer or with a special sharpening device. The *Standard Needle Sharpener*, which sells for \$1.50, was used for sharpening the needles dur-



Figure 1

Photomicrograph of a cactus needle showing stages of wear from being played on a shellac record. The distance the needle wore back after one play was .003 inch. Magnification approximately 60x. ing some of the tests made by Consumers' Research. (This appears to be the same device as the *Kacti Needle Pointer* sold by Peter Grey Laboratories for \$1.50.) It sharpened the needles satisfactorily; its use was much easier than sharpening the needles with a bit of abrasive paper, by hand.

In addition to removing the rough edges, sharpening also removed the protective coating from the needles. Cactus needles must be kept very dry, and once the moisture-resistant coating has been removed, protection against moisture absorption is more than ever needed. One authority has suggested keeping the needles in a chemist's dessicator filled with dry calcium chloride. Even this is said to be inadequate in humid weather, because, according to this authority, the point can pick up enough moisture to cause fuzzy reproduction before one side of the disk has been played.

For those who value high-fidelity reproduction, cactus needles have the drawback that they give reduced sound volume as compared with steel needles, for example, in the high-frequency range. This loss is not the same with all cactus needles, and may be noticeable to the listener with some and not with others, since the needles

are not uniform, even in packages of a given make, and they of course become highly non-uniform with playing. Tests made by Consumers' Research show that resharpening could not be depended upon to restore the response (playing quality) obtained with a given needle during the first playing of a record; indeed, response curves for the same needle, after successive sharpenings, were quite variable.

Quality of reproduction is a matter of choice, of course, and many people prefer to use cactus needles despite the disadvantages of having to resharpen them after each playing and of not being able to use them in a record changer. If minimum record wear is the primary requirement, the use of one of the *B-Intermediate* fiber needles would appear to be justified despite the poor reproduction.

The following ratings are based on record wear, and represent the results of comparative tests of the cactus needles tested. Since it is judged that, for the great majority of consumers, cactus needles will not be as satisfactory as needles of other types, no needle was given a rating higher than *B*.

B. Intermediate

Kacti (Peter Grey Labs., 2029 Thirteenth Ave., Oakland, Calif.) 12 for 35c.

Muscraft Thorn. 6 for 35c.

• • •

Cactus (Cactus Needle Co., 2029 Thirteenth Ave., Oakland, Calif.) 12 for 35c.

Greythorne (Peter Grey Labs.) 15 for 40c.

C. Not Recommended

Decca; Protectone.

Boosters for Television Sets

A Preliminary Report

MANY of the television receivers now being sold are not sensitive enough to operate in a fully satisfactory manner in areas which are at a considerable distance from the television broadcast transmitters. This fault is attributable quite possibly to manufacturers' conscious policies in TV set design. For the most part, makers are supplying single radio-frequency amplifying stages in their sets, because they do not feel that reception should be attempted in places which are more than 40 to 50 airline miles from transmitting stations, and because the demand for sets within the major service area has been more than ample to consume their present production.

It is CR's opinion that good reception is possible in many instances at distances up to 75 miles and possibly further, and that manufacturers will soon have to add the additional tuned amplifying stages necessary to make their receivers sensitive enough that they can be used in this outer or so-called "fringe" area. In the past, of course, TV set manufacturers have found themselves in much the same position as have the automobile manufacturers since the war, in that the demand for sets was much greater than the existing supply; set manufacturers, therefore, felt it safe to build sets a good deal less sensitive than would have been possible and practicable.

Those consumers who are living in a "fringe" area can in many instances, especially in spots where local noise interference is low, improve their reception by adding a television booster to their set, a device which supplies the additional gain in signal strength needed to provide a good picture. Improvement may also be noticed in a lessening of the amount of interference created by automobiles, motors, and other sources of high-frequency noise which tends to spoil the picture. It is also possible that the use of a booster might in some cases be advantageous in a crowded area closer to the transmitter, but tests on this point have not, as yet, been completed by CR.

A television booster consists essentially of a single stage of tuned-radio-frequency amplification which is inserted ahead of the TV set in the antenna circuit. It usually has provision

for covering all twelve TV channels and is also provided with a switch by which it can be disconnected from the antenna circuit when desired.

Of the three boosters tested, one, the *Anchor*, was considerably more effective than the two others in that its use resulted in much higher gains in signal strength on the bands on which it was tested. This was attributed to superior impedance matching and also to the excellent design and workmanship used.

A. Recommended

Anchor Radio TV Pre-Amplifier, Model 101-50 (Anchor Radio Corp., 2215 S. St. Louis Ave., Chicago) \$35. Net at some mail-order dealers, \$23.33. 8 $\frac{3}{8}$ x 4 x



Anchor Radio TV Pre-Amplifier, Model 101-50



Vision Tele-Booster

5 in. Single tube radio frequency amplifier; had a power transformer (desirable — not the ac-dc type of circuit). Covered lower and upper TV bands separately with two sets of variable inductances. Means are provided for switching the television antenna directly to the television receiver when the booster is not in use. Chassis was ruggedly constructed and fully shielded. The *Anchor* showed marked superiority over the other two makes tested with regard to improvement in brightness of picture. No measurable shock hazard was found. 1

B. Intermediate

Vision Tele-Booster (Vision Research Laboratories, 87-50 Lefferts Blvd., Richmond Hill, N.Y.) \$37.50. Usual net, \$22.50. 2-band capacitive tuning was employed, making use of 2 tubes as r.f. amplifiers. Self-contained power sup-

ply using selenium rectifier was of ac-dc type with one side of line connected directly to chassis; an extreme degree of shock hazard was, of course, the result of this arrangement. Compared to *Anchor*, was poorly wired and assembled. Television antenna was switched directly to TV set when booster was turned off. It is believed this unit if purchased should be taken on a trial basis only, as it is judged that the poor wiring and assembly might result in instability in some cases. 1

C. Not Recommended

Crystal Devices Videamp, Model 13B (Crystal Devices Co., Inc., 1819 Broadway, N.Y.C.) \$22.50. Used a 13-step selector without fine tuning. An antenna impedance adjustment was provided in the back of the unit. Offered least gain of the three boosters tested. Shock hazard, excessive. 1

REFRIGERATOR "GADGETS"— for Deodorizing, Removing Moisture, etc.

Stor-Aid is a *refrigerator deodorizer* which is made out of an Army gas mask filling. The contents of the canister are about one pound of soda lime, activated carbon, and some copper salt, which are materials conventionally used in the canister of a gas mask. The department store advertiser's claim that the material would absorb odors is, of course, not correct, without qualifications. Nothing would do that indefinitely, or for a very long period. Carbon is not reactivated merely by heating it in the sun or in the oven, as the offer claimed.

It is doubtful whether this unit would have any value in the refrigerator after it had been in service for a few months, and it is even doubtful whether its absorption would be effective during that period. The claim that the gadget will absorb moisture is unjustified. The caustic soda in the mixture will take up a little moisture and then "it is through" and the amount which it takes up would be too small to be of any practical significance.

The ease with which gadgets of this kind can be sold is apparently related to the consumers' willingness to believe a considerable proportion of what advertising men or salesmen tell them; a fairly substantial proportion of consumers will believe the claims because the means available to them at the time and subsequently to test their truth or falsity are very limited or entirely lacking. Thus they will, as a rule, never discover whether the product works or whether perhaps it has worked for a time and ceased thereafter.

Foodsafe, another item offered by various department stores for use in refrigerators, was analyzed and appeared to consist of infusorial earth, and calcium carbonate impregnated with a polymer of formaldehyde which releases the formaldehyde slowly. Possibly the compound *Trioxane* advertised by E. I. duPont de Nemours as releasing formaldehyde in this way was the substance used. It seems at least doubtful whether the use of formaldehyde in this way is desirable or completely devoid of possible dangers to health (if it is effective in performing as claimed). Moreover, claims used in the sale of this product that it has brought about elimination of excess moisture appear to be unjustified, for the evaporator (freezing element or the source of cold in the box) in the electric refrigerator acts to remove moisture from the contents of the box — in fact, is often found to be too effective in doing so.

The claims and guarantee for *Foodsafe* are typical of those for many gadgets for the household. The guarantee, for example, provides that "if you have any trouble with your *Foodsafe* within two years, you may return it and receive a new one at absolutely no cost." Why should any unit of such simple construction give any trouble that would be recognized as such? The important thing that should, from the consumers' standpoint, be in the guarantee, is entirely lacking, and that is a guarantee of *just what the device will do within two years*. It certainly will not and cannot provide the "humidity control" which the advertising features.

Loud-Speakers

A QUESTION typical of that asked by many subscribers in their correspondence with CR is "What speaker shall I use with the following equipment . . ." The answer will usually depend upon the quality of the amplifier mentioned, for it is important from a cost standpoint in choosing the components of any high-fidelity system, that the quality of each separate unit be reasonably related to that of the other elements with which it will be used. Thus there is no advantage in using a very expensive speaker of fine performance in the output circuit of an amplifier of only good or mediocre grade. It would not be in order, for example, to employ the *Knight High Fidelity 20-Watt Phono Amplifier*, Model 20W-PH (\$60) or the *Thordarson Tru-Fidelity Amplifier*, Model T-31W10A (\$65), along with the *Klipsch Speaker System* (\$426) or the *Altec-Lansing 604B* duplex system (\$311). A better choice from the cost or economy standpoint with the low-priced amplifiers would be either the *Cinaudagraph Cin 12A Cinaxial* (\$16) or the *General Electric S-1201D* (\$17) used as a "woofer" in conjunction with a *University 4401* "tweeter" (\$12), both suitably mounted in a cabinet. Under the usual listening conditions in the home and with the usual radio tuner and phonograph pickup, it would be difficult, probably impossible, to find any important differences between the sound output of the *Altec 604B* used with an amplifier of ordinary quality and the sound produced by a far less expensive speaker.

It is CR's belief that near-satisfaction for even the very critical listener can be attained at comparatively low cost, if his tastes are not what might be called bizarre and if he is content with a level of sound not quite as high as that received, for instance, by a listener in a good seat at a symphony concert. In this connection, a desire for very heavy bass is impossible to satisfy with usual equipment. *Clean, heavy bass calls for an extraordinary grade of amplifying and reproducing equipment, for most amplifiers and speakers are incapable of full output in the bass region without producing a great deal of distortion.* Good, "solid" bass will call for the use of very expensive high-quality equipment throughout the system. A pseudo-heavy-bass similar to the "one-note-thump" or "barrel-tone" one commonly hears in juke boxes can be achieved, however, with a strongly resonant large-cone speaker, say a fifteen-inch unit, in a cabinet with a cavity of a size that resonates near the preferred frequency.

Similarly, a taste for exaggerated crispness in the high frequencies, those sounds that give sharpness to the sibilants of speech and "edge" to the tone of piano, string, and brass instruments will be expon-

IN the following article, CR provides an analysis of the problem of choosing a loud-speaker. This is the problem which presents itself to anyone who has occasion to assemble the various components or units necessary into a system for sound reproduction. The discussion deals especially with the questions that concern the person interested in "high-fidelity" reproduction of orchestral and other good music.

A surprisingly large amount of correspondence has been received from subscribers, indicating their need for the kind of information a critical article on loud-speakers would provide; it is hoped that the information assembled here will be of help to the many who wish to build or assemble their own radio, phonograph, or sound equipment, in their choice of speakers suitable to their needs.

sive to satisfy. Such reproduction definitely calls for a "two-way" system — a "woofer" and horn-type "tweeter" combination with accompanying amplifier equipment having low distortion and wide frequency range at full power. Only exceptional (and expensive) amplifiers maintain quality and power at the bass and treble extremes. Moderate emphasis (as much as 10 decibels at 50 cycles and 8000 cycles), using tone controls, can be achieved with the *General Electric S-1201D* or any of the other speakers of the same type and size in the relatively inexpensive class.

It is doubtful that a smooth response in the region above 6000 or 8000 cycles is attainable in any commercially available speaker at the present time. A reasonable approach to smoothness in the range up to 7000 cycles is offered by the better coaxial systems and by the separate-unit two-way systems mentioned in the listings. To repeat, at reasonable power levels, which seldom need be exceeded in the home, the combination of a good amplifier such as the *Thordarson* or *Knight* units mentioned previously with such a speaker as the *GE S-1201D* or the *Altec-Lansing 600B* and a good high-frequency horn ("tweeter"), such as *University 4401*, will give a very satisfactory approximation to the original music, and at a quite reasonable cost, i.e., for good reproduction. If two of the *S-1201D* or *600B* speakers are used, in parallel, and properly "phased," a better reproduction of the low tones of music will be afforded.

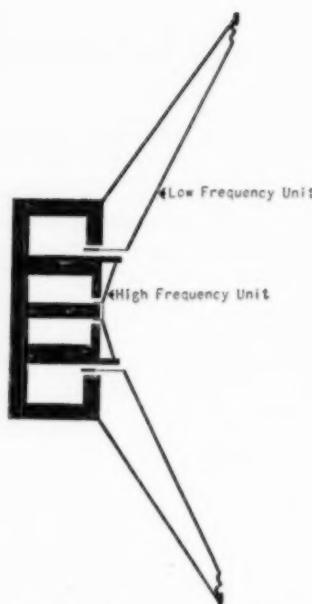
Speaker Housing

Closely related in importance to the particular speaker chosen is the method used to mount and

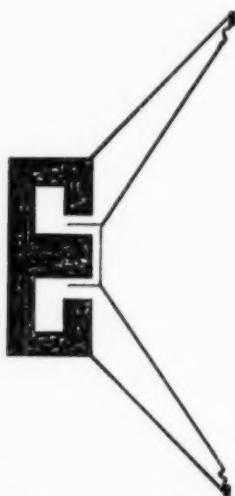
enclose the speaker. In practically all the commercial radio-phonograph combinations now available, the speaker is mounted in the same cabinet as the other components of the system. This practice generally results in reproduction which is inferior to that which is possible if a separate baffle made of $\frac{3}{4}$ -inch wallboard of not less than 16 square feet area (or something near that figure) is used. The speaker is best mounted 8 to 11 inches off center, on a diagonal, in such a baffle, but non-central mounting is not essential.

The usual speaker housing is an open-back cabinet of sufficient depth to cause resonant reinforcement of some of the lower frequencies. The chief objection to an open-back cabinet is that its use results in a characteristic "hump" in the response curve which is at the approximate resonant frequency of the speaker cone and cabinet. This form of cabinet also fails to damp or check the movements or excursions of the speaker cone that tend to persist after the signal from the amplifier has been reproduced. The "hangover effect" due to movements of the speaker cone continuing after the impulse has ceased results in distortion and impaired fidelity. Speakers vary widely in their own tendency to "hangover," all of the recommended speakers being notably good in this regard. Likewise, amplifiers vary widely in their ability to control this effect; triode amplifiers are superior in restraining "hangover."

Putting a back on the cabinet improves the response, but in a closed cabinet, part or all of the interior is covered with a material such as cotton felt, or *Ozite*, or similar rug-cushion material



Example of a **coaxial speaker** of the type that employs low- and high-frequency units centered on a common axis. (Construction of *RCA LCIA* is similar to above.) — Fourth Group.



Example of **single cone speaker** giving some degree of coverage to both low and high frequencies — First, Second, and Third Groups, in the listings.

which will help damp reflected sound (prevent reverberation). The closed cabinet is known as a "box baffle," and is preferably used with speakers of large cone area and comparatively low resonant frequencies. It can give excellent results, but it is necessarily of large size.

A third type of cabinet, which is probably to be preferred for most home reproducing systems, is the "bass-reflex" baffle. Essentially, it consists of a "box baffle" with an opening cut in the front under the speaker mounting hole and close to it. If correctly constructed, such a mounting results in an extension of the low-frequency response as compared with the usual speaker housing and also gives a smoother over-all frequency response; nevertheless there will be an unevenness in the bass response in any "bass-reflex" system.

Readers interested in the construction of speaker housings are referred to the various articles on this subject¹ which have appeared in several past issues of *Audio Engineering*, 342 Madison Ave., New York 17, *Radio and Television News*, 185 N.

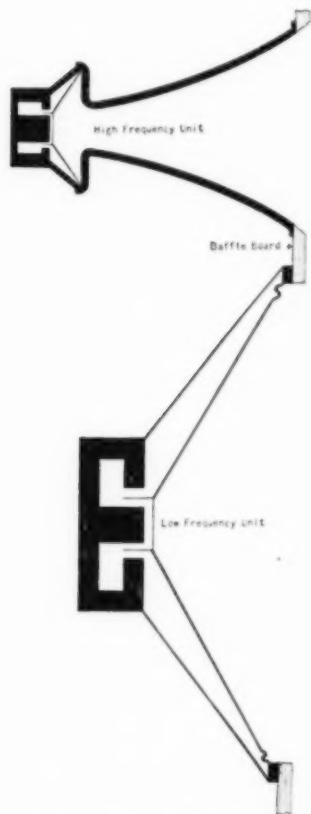
¹A technically sound and compact treatment of all except horn enclosures is given by Read and Endall in the December 1948 *Radio News* under "The Recording and Reproduction of Sound." Theory and construction on bass-reflex enclosures is covered by McPind in "Two Way Speaker System" in *Audio Engineering*, December 1947. A useful but somewhat theoretical treatment on design is given by Drisko in the July 1948 *Audio Engineering* article on "Getting The Most Out of A Reflex-Type Speaker." An interesting modification is a reflex cabinet of reduced size and improved performance given by Planer and Boswell under "Vented Loudspeaker Enclosures" in the May 1948 *Auto Engineering*.

Wabash Ave., Chicago 1, and other widely read journals in the radio and sound fields. Reference should also be made to *Elements of Acoustical Engineering* (1947), by Harry F. Olson, published by D. Van Nostrand and Co., New York City, and considered one of the foremost books in its field. This book and the two journals will be available at large libraries that have good technical collections.

Two general rules which apply approximately to "bass-reflex" cabinet construction are included for the experimenter. (1) The number of cubic feet in the cabinet should at least equal one-half of the number of inches in the diameter of the speaker cone. (2) The baffle opening (port) in the front should contain $8/10$ (0.8) of the number of square inches in the circular speaker opening.

CR's Tests

Because of the many factors which must be taken into consideration in making a judgment be-



Example of typical "two-way" speaker system, employing separate low- and high-frequency units, one mounted above the other — Fifth Group.

tween loud-speakers, it is extremely difficult to say that one particular speaker is superior to another one. Some of the factors cannot be evaluated until the speaker is actually installed and operating in the home. It can be expected that a speaker passing an exacting listening test will have a good response curve, but there is no certainty that a curve of favorable form assures a satisfactory listening test, for curiously enough, some imperfections which can be measured easily are not detected by the listener, while others, which are audible, are most difficult, if not impossible, to investigate by measuring instruments, even with the most advanced equipment now available.

For these reasons, the ratings are based primarily on the results of careful and expert listening tests rather than on instrumental measurements. The listening tests made for CR were conducted under conditions which, as closely as possible, represented the probable optimum conditions which it might be possible to attain in any home. In this way it was possible to evaluate the various speakers and compare them, one against the other, by a controlled reproducible method, and under conditions most favoring good discrimination.

The ratings are based primarily on the results of judgments expressed by a well-qualified listener-jury consisting of 18 engineers and musicians in age groupings between 20 and 50. For the tests, the speakers were grouped so that comparisons could be made within each group among three eight-inch single speakers, among three twelve-inch single speakers, among three fifteen-inch single speakers, among four fifteen-inch coaxial two-way speakers, and between two separate two-way horn-and-speaker systems. This method of listing assumes that, as the experts generally agree, the capabilities of speakers to give lifelike reproduction at the lower frequencies tends to improve as their size increases and also that a "two-way" system in a proper circuit arrangement is to be preferred to a speaker of the coaxial type, because of the greater space for heavier components provided by the separate-speaker arrangement. The superiority of the separate "two-way" system is due to the fact that the additional space it occupies makes possible the use of a heavier diaphragm in the high-frequency horn, a heavier magnet and horn assembly, and a desirably lower crossover point (there are exceptions: Altec-Lansing's ingenious 604B coaxial speaker accomplishes these purposes in a unit of reasonable compactness; most coaxial units are not so successful in achieving the desired result).

No measurements of speaker *efficiency* were made, and the purchaser should note that in some instances a speaker otherwise good may require considerably greater power input to produce a given sound level than another comparable speaker of high efficiency.

Ratings on the majority of the speakers included were verified by an expert music-critic at a different

place and time under quite different listening conditions.

The prices quoted on the *Western Electric*, *RCA*, and *Klipsch* speakers are list prices.

First Group—Speakers with 8-inch Cone

A. Recommended

Altec-Lansing Dia-Cone Speaker, Model 400B (Altec-Lansing Corp., 161 Sixth Ave., New York 13) \$18. Input rating, 12 watts. Input impedance, 8 ohms. Preferred overall in its group by 70% of the judges. Some may prefer to use two of these speakers rather than a single-cone 12-in. unit such as the *General Electric S-1201D*. 2

B. Intermediate

Jensen Extended Range Speaker, Model P8SH (Jensen Manufacturing Co., 6601 S. Laramie Ave., Chicago) \$8.35. Input rating, 7 watts. Input impedance, 6-8 ohms. Preferred overall by 15% of the judges. 1

Western Electric, Model 755A (Distributed by Graybar Electric Co., 420 Lexington Ave., New York 17) \$47.95. Input rating, 8 watts. Input impedance, 4 ohms. 3

Second Group—Speakers with 12-inch Cone

A. Recommended

General Electric, Model S-1201D (General Electric Co., Syracuse) \$17.35. Input rating, 25 watts. Input impedance, 8 ohms. Measured frequency response, 45 to 7600 cycles with some output up to 13,000 cycles. Judged not equal to *Altec 600B*, but a good speaker. Preferred by 30% of the judges. 2

Altec-Lansing Dia-Cone Speaker, Model 600B (Altec-Lansing Corp.) \$45. Power rating, 20 watts. Input impedance, 8 ohms. Preferred in its class by 60% of the judges. 3

B. Intermediate

Western Electric, Model 728B (Distributed by Graybar Electric Co.) \$107.80. Power rating, 30 watts. 4-ohm impedance. 3

Third Group—Speakers with 15-inch Cone

A. Recommended

Altec-Lansing Dia-Cone, Model 603B (Altec-Lansing Corp.) \$63. Rating, 25 watts. Input impedance, 8 ohms. Considered very slightly inferior to the *Lansing*, Model D-130, and an improvement over the previous *Model 603*. Preferred in its class by 25% of the judges. 3

Lansing, Model D-130 (James B. Lansing Sound Inc., 4221 S. Lincoln Blvd., Venice, Calif.) \$46.50. Rating, 20 watts. Input impedance, 15 ohms. Preferred by 60% of the judges. 3

B. Intermediate

Stephens P52FR (Stephens Mfg. Corp., 10416 National Blvd., Los Angeles 34) \$47.04. Power rating, 15 watts. Input impedance, 8 ohms. Preferred by 15% of the judges. 3

Fourth Group—15-inch Coaxial

A. Recommended

Altec-Lansing, Model 604B (Altec-Lansing Corp.) \$175.50 including dividing network (cabinet \$135 extra). Power rating, 30 watts. 16-ohm impedance. Judges rated *RCA LC1A*, *Stephens P25A*, and *Altec-Lansing 604B* as about equal in performance; all three were judged excellent for full high-fidelity reproduction. 3

RCA, Model LC1A (RCA, Camden, N. J.) \$90 for speaker only (MI-11111); \$290 for speaker, cabinet, and high-frequency "roll-off" control. As to preference, see remark in listing of *Altec-Lansing 604B*. 3

Stephens, Model P52A (Stephens Mfg. Corp.) \$120.54 including dividing network but without cabinet. Rating, 20 watts. Input impedance, 16 ohms. As to preference, see remark in listing of *Altec-Lansing*, Model 604B. 3

B. Intermediate

Western Electric, Model 753C (Distributed by Graybar Electric Co.) \$343.75. Although this is a separate "two-way" system, it was tested with other speakers in the Fourth Group and is therefore so listed. 3

Fifth Group—Two-Way Systems, Using Separate "Woofer" (large speaker) and "Tweeter" (small speaker for reproducing the higher frequencies)

A. Recommended

Klipsch Speaker System, Model 1A (Distributed by Brociner Electronics Lab., 1546 Second Ave., New York 28) \$426 (includes cabinet). Over-all (and notably low frequency) reproduction, excellent; frequency response extended from 30 to 15,000 cycles. Generally recognized by speaker critics as the "standard" by which other high-priced speakers for home use are judged. AA3

Lansing, Model D-1000 (James B. Lansing Sound, Inc.) \$219 (includes cabinet). Rating, 25 watts. Input impedance, 16 ohms. Comparable to the *Stephens P52HF*. 2

Stephens, Model P52HF (Stephens Mfg. Corp.) \$188.16 (includes cabinet). Rating, 20 watts. Input impedance, 16 ohms. 2

Oil Burners and A Boiler-Burner Unit

BASED upon field investigations and recommendations of CR consultants, CR's 1948-1949 *Annual Cumulative Bulletin*¹ listed four high-pressure and two low-pressure gun-type conversion burners, and one boiler-burner unit, in advance of the printing of descriptive material in Consumers' Research monthly BULLETINS. In general, these listings were for more or less conventional burners in their respective fields, and thus represented additional manufacturers rather than radical new developments. The present article provides a more detailed discussion and listings of these burners.

Gun-type burners are those having the familiar horizontal nozzles through which a mixture of oil and air is sprayed into the furnace through the action of a pedestal-mounted motor, fan, and pump. High- and low-pressure types are similar in most respects; the basic difference is in the pressure at which the oil is delivered to the nozzle, which is about 100 pounds per square inch for high-pressure burners, five pounds per square inch for low-pressure burners.

Boiler-burner units, with relatively few exceptions, are merely conventional boilers and conversion burners mounted in a single jacket or casing, to improve appearance and saleability.

In selecting a gun-type burner, and particularly in choosing between the high- and low-pressure types, particular attention should be given to the *burner size as proportioned to the size of the house to be heated*. An oversized burner, i.e., one having too high a capacity in gallons per hour, will, unless "throttled down," operate too infrequently or with "on" periods that are too short for either optimum efficiency or a reasonably uniform heating effect. Unfortunately the only way to throttle a burner is through the use of smaller nozzles than experience dictates. Too small a nozzle is highly undesirable, as the smaller nozzles have a high degree of susceptibility to change in characteristics by wear, and clog up easily, besides, with

even the smallest particles. Manufacturers, in their desire to cover as broad a capacity field as possible, frequently offer models with ridiculously small and hence notoriously troublesome nozzles. For this reason, CR does not list *high-pressure* gun-type models as *A. Recommended* when offered or installed with a burning rate of less than one gallon of oil per hour. This difficulty is largely circumvented in the low-pressure models, where, with any given rate of oil feed, larger orifices are used because the air required for combustion is mixed with the oil inside the nozzle itself, resulting in a foamy mixture which is discharged at low pressure and can be safely adjusted to a lower burning rate (a smaller number of gallons per hour). A further advantage of the low-pressure type is a greater flexibility in the use of various grades and qualities of oil. However, these advantages are somewhat offset, in all but small homes, by higher first costs determined by the more intricate pumping mechanism required with the low-pressure type.

Table I
Relation Between Size of Heating System and Maximum Oil Feed that Should Be Required

Steam Radiation (sq. ft.)	Hot Water Radiation (sq. ft.)	Maximum Oil Feed (gal. per hr.)
150	240	0.5
300	480	1.0
450	720	1.5
600	960	2.0
750	1200	2.5
900	1440	3.0
1050	1680	3.5
1200	1920	4.0
1350	2160	4.5
1500	2400	5.0
1800	2880	6.0
2400	3840	8.0
3000	4800	10.0

¹Now available, to individual ultimate consumers only, for \$2.75 (Canadian and foreign, \$3).

While the proportioning of a burner to a given home should always be done by a qualified heating man, CR has prepared Table I to give the reader a rough or general correlation between the radiation requirements and the maximum oil feed (oil burner size) that will probably be required.

High-Pressure Atomizing Gun-Type Conversion Oil Burners

A. Recommended

Bettendorf, Models B*, G1*, G2, D, HD3 (Bettendorf Oil Burner Co., Marshallton, Iowa; division of the Lennox Furnace Co., Syracuse) (Burners are also sold under the name *Lennox*.) Die-cast housings, adjustable cone-type diffusers for air regulation, two-stage fuel pump, stainless steel nozzle. Motor sizes and oil-burning capacities:

Model	Motor Rating hp.	Minimum gal/hr	Maximum gal/hr
B	—	0.87*	1.65
G1	1/8	0.85*	2.50
G2	1/8	1.35	2.50
D	1/6	2.00	4.50
HD3	1/3	5.00	10.00

Johnson, Models BH-O*, BH-OA, BH-1A, BH-2, BH-2A, BH-3, BH-3A (S. T. Johnson Co., Oakland, Calif., and Johnson-Philadelphia Co., 401 N. Broad St., Philadelphia) Trade name, *Bankhead* Burner. Capacities, 0.8* to 18.0 gal. per hour as shown in table. Cast fan housing, Pyrex glass fire inspection hole at back of burner.

Model	Minimum gal/hr	Maximum gal/hr
BH-O	0.8*	2.25
BH-OA	1.0	3.0
BH-1A	2.0	5.5
BH-2	3.0	7.5
BH-2A	4.0	10.0
BH-3	5.0	15.0
BH-3A	7.5	18.0

The Johnson Co., in rating its burners, allows slightly over 400 sq. ft. of steam radiation per gal. of oil per hour as against an industry-accepted figure of 300. Their rating should not be followed; the purchaser will be well advised to use the more conservative and more generally accepted 300.

Silent Glow, Models 1200, 1300S, 1800, 2800 (Silent Glow Oil Burner Corp., Hartford 6, Conn.) General specifications include cloth-type strainers, alloy stainless steel nozzles, and chrome-steel-rod electrodes. Capacities in gal. of oil per hour (manufacturer's maximum

**Not Recommended* when equipped or sold with a nozzle of less than 1 gallon per hour capacity.

rating): *Model 1200*, 4 gal.; *1300S*, 4 gal.; *1800*, 6 gal.; *2800*, 9.5 gal.

Hart, Models HC, HCM, HC-6, H-10, H-20 (Hart-Heat Dept., Avery Farm Machinery Co., Peoria, Ill.) Equipped with positive oil cut-off to operate when burner stops.

Model	Motor hp.	Minimum gal/hr	Maximum gal/hr
HC	1/6	1	3
HCM	1/6	1	2½
HC-6	1/6	3	6
H-10	1/3	6	10
H-20	1/2	10	20

Quiet May, Models NSJ*, N, O, S, and C (May Oil Burner Div., Geroter May Corp., Baltimore 3) The manufacturer's variable efficiency rating schedule allows much greater latitude to the installer in recommending a burner to a job than the generally accepted industry figure of 300 sq. ft. of steam radiation; it is believed that the manufacturer's figures should be disregarded in the selection of a burner size. Motor sizes and capacities are as follows:

Model	Motor hp.	Minimum gal/hr	Maximum gal/hr
NSJ	1/8	0.85*	2.25
N	1/8	2.25	4.5
O	1/8	4.5	6.5
S	1/4	6.5	10.0
C	1/2	10.0	15.0

Low-Pressure Gun-Type Conversion Unit

A. Recommended

Winkler, LP Burners, Model L-2 (U. S. Machine Corp., Lebanon, Ind.) Capacities of either 0.5, 0.75, 1.00, 1.25, or 1.5 gal. per hour can be obtained from the L-2 model by minor changes to the pump at the time of installation (or later by a serviceman). Manufacturer urges use of pre-cast combustion chamber of approved design for optimum results. Oil is metered to a specially designed nozzle by a positive-displacement piston pump.

Boiler-Burner Units

A. Recommended

Oakmont, with *Arco Flame* Burner, Models S-84-OB to S-89-OB (American Radiator & Standard Sanitary Corp., Pittsburgh 30) The *Oakmont* boiler is manufactured in six sizes ranging from 390 to 810 sq. ft. of installed steam radiation (625 to 1295 sq. ft. of installed hot-water radiation). The boiler is of cast iron, with built-in coil for domestic hot water. As used and jacketed with the *Arco Flame* Oil Burner (either boiler or burner can also be obtained separately), the maximum oil burner capacity ranges from 1.5 to 2.75 gal. per hour.

The Kaiser DA-2S "Hydraulic" Dishwashing Machine

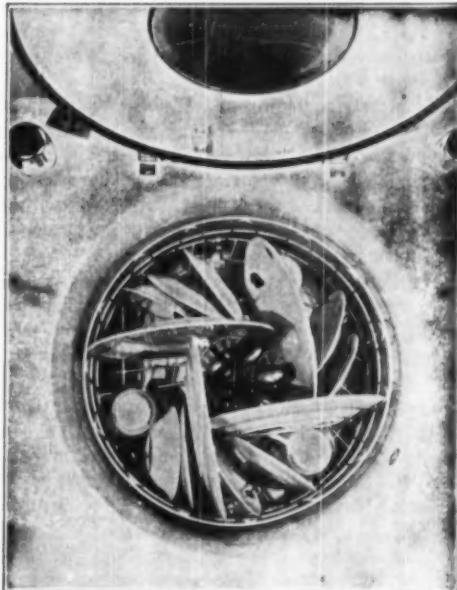
In a previous issue (August 1947), CR gave a *C-Not-Recommended* rating to the *Kaiser* Hydraulic Dishwasher, citing such objections as its small size, non-automatic mechanism, poor results in cleansing dishes, and the necessity for having a static water pressure of at least 40 pounds per square inch. Subsequent to the appearance of CR's findings, the manufacturer equipped the washer with a motor-driven booster pump to provide assurance of the necessary minimum water pressure. CR has made tests on the new model comprising this and other changes. The results indicate that for the most part the difficulties reported on the previous model have not been eliminated, and it was not possible to detect significant improvement in the operating results or convenience of the modified washer as compared with the previous one.

The instructions provided with the new unit (*Kaiser*, Deluxe Cabinet-Model DA-2S) were essentially the same as those drawn up before the addition of the motor and pump.

Fittings supplied by manufacturer for connecting to the hot-water supply and the drain were not complete.

The dish capacity of the new machine was found, as it was with the old, to be entirely inadequate even for a family of only three persons, and was hopelessly small for any larger group. The manufacturer's own illustrations show a capacity load of only four each of dinner plates, dessert plates, cups, saucers, glasses, and knives, forks, and spoons; in actual use, even this load was found to crowd the unit, so that surfaces of many items being washed were blocked off from an adequate water spray. *Kaiser* recommends "use of an extra dish basket . . . for large families"; actually, because of the size limitation, this would be necessary for even three to four persons, with correspondingly increased time and water consumption.

Since the machine is not automatic, its operation requires six manual alterations to the positions of three external levers, plus the addition of the detergent, to provide for the loading, primary rinse, washing, rinsing, and drying periods. The shortest interval between



View of *Kaiser*, Deluxe Cabinet-Model DA-2S Hydraulic Dishwasher, showing limited capacity.

these manipulations is 15 seconds and the longest 2 to 3½ minutes. Since the manufacturer includes such cautions as, "too little rinsing leaves suds on dishes, too much rinsing leaves water droplets" and washing time depends "on the greasiness of the dishes, the water pressure, the temperature and hardness of the water," it may be assumed that a degree of care is required in the timing or judging of these operations, and thus use of the machine will call for constant attention over a total period, including time for loading but not scraping, of some 7 minutes — a longer time than was needed to wash and dry the same dishes by the old-fashioned dish-pan method.

Thorough scraping, to about the equivalent of a preliminary washing, was required to obtain clean dishes and, particularly, silverware. If even a slight amount of egg, jam, or grease was left on the tines of forks or surface of plates, it was still there after even 3½ minutes with 140° water. (The manufacturer's minimums are 2 minutes and 120° water.)

Some literature supplied with the machine was either wholly or primarily concerned with the use of *Chat* as a detergent. It was found in previous tests that *Chat* was not as effective a dishwashing detergent as *Calgonite*, and *Chat* also had the disadvantage that when spilled on a red linoleum counter surface it so bleached and raised the surface that replacement of the linoleum was necessary.

The dishes are intended to be dried partly by their elevated temperature produced by the hot wash water, and also by rotation of the dish basket after the rinse water is turned off. As the rotation of the basket is determined only by the incoming water and starts to slow down as soon as the water flow ceases, the "drying" cycle cannot be extended. As a result, a large part of the dishes and silverware, particularly in the center where the centrifugal force tending to throw off the water is small, were not dry when rotation ceased and were left to dry by evaporation alone. In fact, removing dishes from rinse water to a drain basket on the side of the sink would accomplish about the same results. Actually, it was found necessary in practice to wipe nearly all the pieces manually before putting them away.

Construction of the appliance was judged to be only fair; among other defects, there was too much play in the action of the "Drain" control mechanism; this prevented the drain valve at bottom of the tub from seating positively; on several runs, the plug was held off its seat to a point where the water level did not build up in the tub. The result, of course, was a waste of hot water and of detergent to the drain, and the washing cycle was reduced to a mere continuous rinsing, instead of what is required.

Hot-water consumption of over 10 gallons per load (3 gallons per minute) was high and

would prove to be a severe tax on many water systems, particularly those with 30-gallon storage tanks, a common size.

A principal advantage of a well-designed mechanical dishwasher is that the sterilization of the dishes is improved by using water much hotter than can be borne by the hands. Kaiser claims, however, that "Chat does not require extra-hot water," and that it is effective with water as low as 120°, a temperature at which there would not be effective sterilization and that would afford no particular advantage over dishwashing by customary methods.

Use of the machine involves a number of chores (not necessary in other machines) including removal of spilled *Chat* "immediately"; weekly removal and cleaning of some seven screens; occasional opening of the jets "with a hairpin or paper clip"; cleaning of another screen located in the inlet tee of the water supply strainer every six months. Lubrication of the main spindle is required after each six months of use.

C. Not Recommended

Kaiser, Deluxe Cabinet-Model DA-2S Hydraulic Dishwasher (Kaiser Fleetwings, Inc., Bristol, Pa.) \$239.50. A cabinet-model, top-loading machine with motor and pump (for boosting water pressure only). Dish basket is rotated solely by the force of incoming water and not at a very high speed. Built-in hydraulic elevator raises and lowers the basket for more convenient loading. Dish capacity inadequate even for one meal's dishes for family of 3. Dishwashing results, poor; dishes were not fully dried by spinning and had to be dried by hand. Excessive amounts of hot water used, averaging about 10 gal. per cycle. Construction, only fair; main drain valve did not seat positively due to faulty actuating mechanism, and there were no means for indicating whether it was seated. Since all operations were hand controlled, washer tended to require a good deal of attention. Instructions indicated need for considerable periodic servicing. 3

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Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Box Office, Charm, Chicago Daily Tribune, Cue, Daily News (N.Y.), The Exhibitor, Harrison's Reports, Motion Picture Herald, National Legion of Decency List, Newsweek, New York Herald Tribune, New York Times, Picture Magazine, Review of the Day, Picturegoer, Standard Film Advertising, Variety (weekly), Weekly Guide to Selected Motion Pictures (National Board of Review of Motion Pictures, Inc.), and Unbiased Opinions of Current Motion Pictures which includes reviews by the General Federation of Women's Clubs, the American Legion Auxiliary, National Film Music Council, and others.

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), or C (not recommended) on its entertainment values.

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure	hist—historical
biog—biography	mel—melodrama
c—color (Technicolor, Cinecolor, etc.)	mus—musical
Tricolor, Magnacolor, Vitacolor, etc.)	myst—mystery
cpt—cartoon	rom—romance
com—comedy	so—social-problem drama
cri—crime and capture of criminals	trav—travelogue
doc—documentary	war—dealing with the lives of people in wartime
dr—drama	wes—western
fan—fantasy	

A	B	C	
—	5	6	Abbott & Costello Meet Frankenstein com A
—	7	2	Accused, The cri-mel A
2	5	—	Act of Murder, An dr A
—	4	5	Adventures of Gallant Bass wes-c AYC
—	2	7	Angel in Exile mel A
1	11	1	Angry God, The dr-c A
—	1	3	Apartment for Peggy dr-c A
—	3	3	Appointment With Murder cri-mel A
2	7	8	Arkansas Swing, The mus-com AYC
—	2	8	Babe Ruth Story, The mus-biog AYC
—	3	2	Back Streets of Paris mel A
—	3	10	Back Trail wes AYC
—	3	10	Bad Sister nos A
—	3	—	Badmen of Tombstone wes A
—	4	2	Behind Locked Doors mel A
—	3	4	Belle Starr's Daughter wes A
—	2	1	Bells of the Old City com-c A
—	—	4	Betrayal, The mel A
1	4	11	Beyond Glory dr A
11	2	2	Black Arrow, The adv AY
—	4	3	Black Eagle dr A
—	3	8	Bianche Fury mel-c A
—	2	1	Blazing Across the Pecos mus-wes AYC
—	1	7	Blind Desire dr A
—	9	5	Blood on the Moon wes A
—	4	6	Bodyguard mel AY
—	3	1	Borrowed Trouble wes AYC
—	4	2	Boy with Green Hair, The fas AYC
—	1	6	Bungalow 13 mys-mel A
—	10	3	Canon City doc-cri-mel A
—	2	3	Carson City Raiders wes AYC
			Cesar dr A
			Champagne Charlie mus-com AY
			Checkered Coat, The mel A
			Chicken Every Sunday com A
			Code of Scotland Yard cri-dr A
1	8	1	Coroner Creek wes-c A
	4	1	Corridor of Mirrors dr A
	4	2	Counterfeitors, The mel A
	3	5	Countess of Monte Cristo, The mus-com A
	1	5	Creeper, The mel A
2	12	3	Cry of the City mel A
	2	5	Daredevils of the Clouds mel AY
	3	—	Dark Past, The cri-mel A
	13	4	Date With Judy, A mus-com-c AY
	1	2	Dead Don't Dream, The wes AYC
	3	8	Decision of Christopher Blake, The dr A
	12	4	Deep Waters dr-c AYC
	3	1	Desperadoes of Dodge City wes AYC
	1	5	Disaster cri-mel A
	7	9	Dream Girl, The com A
	6	3	Dulcimer Street dr A
	2	5	Dynamite mel AY
	3	2	Eagle With Two Heads, The dr A
2	16	1	Easter Parade mus-com-c AYC
	6	5	Embraceable You cri-mel A
1	5	1	Enchantment dr A
	7	7	Escape nos A
	9	3	Every Girl Should Be Married com AY
	3	2	Eyes of Texas, The mus-wes-c A
	5	1	Family Honeymoon com AYC
	6	5	Feudin', Fussin', and A-Fightin' mus-com AYC
	9	4	Fighter Squadron war-mel-c A
	1	4	Fighting Back mel AYC
	—	3	Foolish Husbands com A
	8	9	For the Love of Mary mus-com AY
4	10	4	Foreign Affair, A mus-com A
	5	2	Four Steps in the Clouds com A
	4	2	Friend Will Come Tonight, A war-mel A
	6	6	Gallant Blade, The mel-c AYC
	6	2	Gallant Legion, The mus-wes AYC
	5	4	Gay Intruders, The com A
	2	6	Gentleman from Nowhere, The mys A
	2	7	Girl from Manhattan, The com AYC
	12	3	Give My Regards to Broadway mus-com-c AY
	1	3	Golden Eye, The cri-mel AY
	9	10	Good Sam com A
	3	1	Grand Canyon Trail mus-wes AYC
9	5	1	Hamlet dr A
	—	5	Harpoon mel A
	7	1	He Walked By Night cri-mel A
	3	5	High Fury dr A
1	11	4	Hills of Home dr-c AYC
	8	7	Hollow Triumph mel A
	2	3	Homicide for Three mys-mel A
	—	4	Honorable Catherine, The com A
	3	5	I, Jane Doe mel A
	4	3	I Surrender Dear mus-com AY
	2	3	Illegals, The doc-dr A
	3	3	In This Corner mel A
	3	—	Indian Agent wes AYC
	—	4	Inner Sanctum mys-mel A
	6	9	Innocent Affair, An mus-com A
	4	10	Isn't It Romantic? mus-com A
	2	2	Jiggs and Maggie in Court com AYC
7	7	2	Joan of Arc dr AY
	5	—	Joe Palooka in Winner Take All mel AY
2	14	2	Johnny Belinda dr A
1	13	6	Julia Misbehaves com A
1	10	3	June Bride com A
	—	4	Jungle Goddess dr AYC
1	6	1	Jungle Patrol war-mel A
	—	5	Just William's Luck com A

A	B	C		A	B	C	
3	8	3	Key Largo.....	—	12	1	Romance on the High Seas.....
—	7	1	Kidnapped.....	—	3	3	Room Upstairs, The.....
—	—	3	King of the Bandits.....	—	11	6	Rope, The.....
—	1	5	King of the Gamblers.....	—	—	3	Rossini.....
—	5	6	Kiss the Blood off My Hands.....	—	3	3	Rusty Leads the Way.....
—	7	5	Kissing Bandit, The.....	—	2	5	Ruy Blas.....
—	2	2	Ladies of the Chorus.....	—	1	9	Saxon Charm, The.....
—	—	6	Lady at Midnight.....	—	7	11	Sealed Verdict.....
1	9	4	Larceny.....	—	5	8	Secret Land, The.....
—	3	—	Last of the Wild Horses.....	—	1	3	Shanghai Chest, The.....
—	3	5	Leather Gloves.....	—	1	4	Shed No Tears.....
—	4	8	Let's Live a Little.....	—	1	4	Singin' Spurs.....
—	5	—	Letter to Three Wives, A.....	—	2	1	Sinister Journey.....
—	2	3	Live Today for Tomorrow.....	—	—	—	Siren of Atlantis.....
5	7	—	Long is the Road.....	—	7	4	16 Fathoms Deep.....
—	—	1	Louisiana Story.....	—	—	—	Smart Girls Don't Talk.....
—	8	6	Loves of Carmen, The.....	—	2	1	Smugglers Cove.....
—	1	2	Loves of Casanova, The.....	—	3	7	Snake Pit, The.....
—	1	5	Loves of Don Juan, The.....	—	2	4	So Dear to My Heart.....
—	10	5	Luck of the Irish, The.....	—	6	4	So This Is New York.....
—	5	11	Lulu Belle.....	—	9	2	Sofia.....
—	9	6	Luxury Liner.....	—	2	1	Son of God's Country.....
—	—	3	Lysistrata.....	—	8	9	Song is Born, A.....
1	3	6	Macbeth.....	—	—	—	Sons of Adventure.....
—	6	1	Man from Colorado, The.....	—	11	7	Sorry, Wrong Number.....
—	2	3	Manhattan Angel.....	—	4	1	S.O.S. Submarine.....
—	2	4	Marriage in the Shadows.....	—	8	6	Southern Yankee, A.....
—	2	2	Marshal of Amarillo.....	—	—	—	Spirit and the Flesh, The.....
3	10	4	Melody Time.....	—	5	3	Spiritualist, The.....
—	3	1	Merry Chase, The.....	—	9	3	Station West.....
—	4	1	Mexican Hayride.....	—	—	—	Strange Mrs. Crane, The.....
—	5	3	Michael O'Halloran.....	—	2	4	Strange Victory.....
—	2	4	Million Dollar Weekend.....	—	1	3	Street Corner.....
—	6	5	Mine Own Executioner.....	—	16	—	Street With No Name, The.....
—	4	1	Miracle in Harlem.....	—	4	—	Strike It Rich.....
—	2	3	Miraculous Journey.....	—	—	—	Symphonie Pastorale.....
—	12	2	Miss Tatlock's Millions.....	—	3	7	Tap Roots.....
—	1	4	Mlle. Désirée.....	—	9	9	Texas, Brooklyn and Heaven.....
—	2	1	Monsieur Vincent.....	—	7	3	That Lady in Ermine.....
—	3	2	Monte Cassino.....	—	4	2	That Wonderful Urge.....
—	2	6	Moonrise.....	—	2	7	Three Godfathers.....
—	2	4	Mozart Story, The.....	—	6	1	Three Musketeers, The.....
11	3	—	Mr. Peabody and the Mermaid.....	—	2	4	Thunderhoof.....
—	4	4	Murderers Among Us.....	—	2	3	Timber Trail, The.....
—	3	1	Music Man.....	—	2	1	Tragic Hunt.....
—	3	8	My Dear Secretary.....	—	1	6	Trail to Laredo.....
—	5	5	My Own True Love.....	—	1	7	Train to Alcatraz.....
—	5	3	Mystery in Mexico.....	—	—	—	Triggerman.....
—	2	4	Nais.....	—	1	4	Triple Threat.....
—	11	8	Night Has a Thousand Eyes.....	—	7	5	Twisted Road, The.....
—	5	—	Night in Nevada.....	—	—	—	Two Guys from Texas.....
—	6	4	Night Wind.....	—	1	3	Under California Stars.....
—	6	8	No Minor Vices.....	—	9	5	Unfaithfully Yours.....
—	9	3	Northwest Stampede.....	—	1	3	Unknown Island.....
—	1	3	Old-Fashioned Girl, An.....	—	2	6	Untamed Breed, The.....
—	3	—	Olympic Cavalcade.....	—	6	11	Up in Central Park.....
—	7	9	One Touch of Venus.....	—	2	5	Urubu.....
—	2	3	One Sunday Afternoon.....	—	—	5	Vacation Days.....
—	1	5	Out of the Storm.....	—	1	2	Valiant Hombre, A.....
—	10	5	Paleface, The.....	—	3	7	Variety Time.....
—	—	3	Partners of the Sunset.....	—	8	8	Velvet Touch, The.....
—	—	3	Phantom Valley.....	—	1	9	Vicious Circle, The.....
—	3	3	Piccadilly Incident.....	—	10	2	Walk a Crooked Mile.....
1	10	4	Pitfall, The.....	—	6	5	Wallflower.....
—	1	4	Plot to Kill Roosevelt, The.....	—	5	10	Walls of Jerico, The.....
—	6	3	Plunderers, The.....	—	2	4	West of Sonora.....
—	1	2	Prairie, The.....	—	1	2	When Love Calls.....
—	2	5	Private Life of an Actor.....	—	11	4	When My Baby Smiles at Me.....
—	5	1	Quiet Weekend, A.....	—	2	4	Where Words Fall.....
—	2	12	Race Street.....	—	—	3	Whispering City.....
—	8	7	Rachel and the Stranger.....	—	4	2	Whispering Smith.....
—	2	3	Racing Luck.....	—	—	3	White Stallion.....
—	—	3	Range Renegades.....	—	—	4	Will It Happen Again?.....
6	10	1	Red River.....	—	5	1	Winner's Circle, The.....
2	7	5	Red Shoes, The.....	—	—	3	Without Prejudice.....
—	7	5	Return of October, The.....	—	1	6	Words and Music.....
—	4	—	Return of Wildfire, The.....	—	5	3	Yellow Sky.....
—	8	7	Road House.....	—	13	1	You Gotta Stay Happy.....
—	8	4	Rogues' Regiment.....	—	3	—	Your Red Wagon.....

The Consumers' Observation Post

(Continued from page 4)

was told that restaurant tips now average a bare 10 percent. In night clubs, people are given to deducting the 20 percent amusement tax before figuring their tip. More people than ever before are carrying their own bags, railway station red caps report, and fewer people are traveling.

* * *

DRY CLEANING is no longer looked upon as a luxury service, but is as much a part of the family's keeping-clean-process as laundering. One trade journal estimated that seven units of clothing per person are dry cleaned every year in the United States. The most popular of the synthetic-type or chlorinated-hydrocarbon cleaning compounds used by dry-cleaning plants is perchlorethylene. It should be remembered, however, that dry-cleaning solvents will not remove certain types of stains, such as those caused by medicinal and cosmetic preparations, perspiration, certain food and beverage products, iron rust, blood and other albuminous substances. (Dry-cleaning solvents do not remove stains made by water-soluble materials.) The attention of the cleaner should be called to such stains, as they will need to be spot cleaned first. The Indianapolis Better Business Bureau especially points out the need for telling the cleaner about "tannin stains" caused by soft drinks, mixed drinks, coffee, tea, beer, fruit juices, catsup, and mustard, which—unless they are removed when fresh by sponging with clear water—leave a type of stain that is almost impossible to remove.



NEED help ?

Consumers' Research Bulletin can't get you out of every difficult situation, but it can provide useful advice to help you in your purchasing.

Each month Consumers' Research Bulletin presents practical, money-saving information on a wide range of products from television sets to canned tomatoes, with ratings by brand name. Here are just a few typical comments from subscribers in different parts of the country on the value of our service:

Homemaker, Wynnewood, Pa.: Your organization is providing a valuable and much-needed service to the consumer.

very disappointed if I do not have a complete file of Consumers' Research for his inspection and enjoyment upon his return.

Industrial Designer, Syracuse, N.Y.: I have used your splendid periodical many times as reference for research and analysis in the field of industrial design and it has afforded me much valuable information.

Civil Service Employee, Milwaukee, Wis.: Your Bulletins are money savers!

Army Officer's Wife, Davenport, Ia.: I am sure my husband, who is on duty outside the country will be

Public Utility Employee, Petoskey, Mich.: The value of CR has proved itself to me time and time again and in general has paid for itself — perhaps within the first two or three issues.

Let us add your name to the ever-growing list of people who have found that CR's advice has saved them many times the price of a yearly subscription. You will find a convenient order blank on the next page.

SHALL THE GREAT AREAS of federally controlled lands in the West continue to be reserved for national parks and monuments as recreation areas or should they be made available for grazing of cattle and sheep much needed to augment our meat, hide, and wool supplies? One trade association secretary recently pointed out that between 50 and 76 percent of all Western range lands are controlled by the federal government, and in the last 10 years the Forest Service has reduced the numbers of livestock permitted to graze on such land by 44 percent for cattle and 54 percent for sheep. The sheep population of this country is at the lowest level since 1867. Perhaps the American consumer will come to prefer an increase in the supply of meat and a decrease of available vacation territory, once he learns what is contributing to the shortage of meat and its correspondingly high prices.

* * *

SALES OF HOME FREEZERS, which had quite a slump not so long ago, are now staging a comeback. Part of the blame for consumers' unhappy experiences with this type of appliance is ascribed by a locker plant operator, writing to the editor of a trade journal, to misleading claims and advertising for some freezers. He reports that it is a not uncommon experience for a locker plant operator to have an urgent customer come in with a lot of partially frozen food products or a quarter of beef requiring expert attention because he had overestimated the freezing abilities of his home freezer. The locker operator points out that the manufacturer who claims greater freezing capacity for his appliance than it can handle is simply laying up trouble for the entire industry. The consumer who has been misled into believing that he can freeze at one time a bushel of fruit, a pig, or a quarter of beef in a freezer, when it is in fact incapable of handling such a load, spreads news of his failure far and wide.

* * *

RECENTLY TESTED:

Universal Record Brush, sold for 75 cents by the Haynes Products Co., Box 175, Station F, New York 16, is a clip-on brush which cleans records while they are playing. Though the device will fit many pickups, it will not fit such pickups as are wider than 19 mm. (about 3/4 in.), for example. It may also not be applicable conveniently where the distance that the stylus projects below the cartridge is very small, as for example in the General Electric Variable Reluctance and the Pickering pickups. For cleaning the new long-playing records, a slightly dampened soft cloth wiped circularly around the record surface is the preferred method.

Odac (O-Cedar Corp., Chicago; 85 cents per pint) is evidently one of the family of home deodorants and "fresh air sprays" which depend upon the vaporization of the substance formaldehyde or something similar to deaden the smell sense. Its composition was found to be approximately 2.1% Formalin (Formalin is a 40% solution of formaldehyde), 0.1% ethyl alcohol, a trace of dye and perfume, and 97.8% water.

Consumers' Research, Inc.
Washington, N. J.

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New

Renewal



Phonograph Records

By Walter F. Grueninger

Please Note: In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended.

ORCHESTRA

Beethoven: *Symphony No. 1.* Philharmonic-Symphony Orchestra of New York under Walter. 8 sides, Columbia Set 796. \$6. One of Beethoven's less important symphonies. Bruno Walter takes the first movement at an uncommonly slow pace which appears to fit into his over-all conception of the work. Wide range, clean recording with sufficient hall resonance. Some surface noise in low level passages. Columbia's long playing pressing (ML 2027, \$3.85) offers a little more clarity, a few more high frequencies, and almost no surface noise. My choice of Beethoven *Fists* remains Toscanini's in Victor Set 507 (\$7.25) which includes Brahms' *Tragic Overture* — two exciting performances acceptably recorded.

Interpretation A
Fidelity of Recording AA

Dvorak: *Symphony No. 4.* Philharmonic-Symphony Orchestra of N.Y. under Walter. 8 sides, Columbia Set 770. \$6. Delightful, flowing symphony — among Dvorak's best. Played superlatively. Recorded with some chamber resonance by over-all mike technique. Yet, high frequencies lack sufficient volume.

Interpretation AA
Fidelity of Recording A

Grieg: *Lyric Suite.* National Symphony Orchestra (G.B.) under Sargent. 4 sides, English Decca Set 63. \$5.25. Melodious music performed with dignity. Large-toned recording.

Interpretation AA
Fidelity of Recording AA

Mozart: *Symphony No. 33* (5 sides) & *Marriage of Figaro* — *Overture* (1 side). Vienna Philharmonic Orchestra under von Karajan. Columbia Set 778. \$4.75. One of Mozart's less familiar and inspired symphonies. Energetic, sweeping performance. The recording, while lacking some of the highest frequencies is clean, smooth, and full with more than ample hall reverberation.

Interpretation AA
Fidelity of Recording A

Rimsky-Korsakov: *Suite from Tsar Sultan.* London Philharmonic Orchestra under Fitelberg. 4 sides, English Decca Set 65. \$5.25. Fastidious, sparkling suite, reminiscent of the more effective *Le Coq d'Or*, which the composer arranged from his rarely performed opera. Powerful performance that misses some of the sweetness and ease. Recorded with too much reverberation.

Interpretation A
Fidelity of Recording A

CONCERTO

Mozart: *Concerto No. 4.* Heifetz (violin) with the Royal Philharmonic Orchestra under Beecham. 6 sides, RCA Victor Set 1267. \$4.75. Marvelously integrated performance of one of Mozart's most engaging concertos. Competitive Szegedi-Columbia Set 224, under the same conductor, has led the field for a decade and remains a remarkable set for luminous performance. But Columbia's recording gives ground. Columbia's old surfaces are more quiet.

Interpretation AA
Fidelity of Recording AA

Tchaikovsky: *Concerto No. 1.* Levant (piano) with the Philadelphia Orchestra under Ormandy (9 sides) & **Rachmaninoff:** *Prelude in G Major* (Op. 32, No. 5) (1 side). Levant (piano). Columbia Set 785. \$7.25. A showpiece that fails to live up to its thrilling opening measures. Levant proves nearly sufficiently dexterous though blurred passages are heard. Moreover, he exaggerates and lacks the warmth and musicianship that give a plus value to my favorite, Rubinstein-Victor Set 1159 (\$6). Furthermore, the piano and orchestra are not always on the beat. Levant's recording is dry and at times the balance of instruments is faulty. But his surfaces are quieter than Rubinstein's. Overall, Rubinstein. The fidelity of Columbia's LP pressing (ML

4096, \$4.85) rates a little higher than the standard pressing.

Interpretation A

Fidelity of Recording A

VOCAL

Nelson Eddy in Songs of Stephen Foster. Vol. 2 (baritone). 8 sides, Columbia Set 795. \$6. Here and there the scoring and chorus suggest a radio production, but in all other respects, like its predecessor, this is a first rate album. "Beautiful Dreamer," "Gentle Annie," "Slumber, My Darling," etc.

Interpretation AA

Fidelity of Recording AA

Four Operatic Arias Sung by Jan Peerce (tenor). 4 sides, RCA Victor Set MO 1250. \$3.50. "E Lucevan Le Stelle," "Vesti La Giubba," "Cielo E Mar," and "Rachel" sung vehemently by the best "Italian" tenor in this country. Admirably solid and round recording.

Interpretation AA

Fidelity of Recording AA

Gabriella Gatti (soprano). 4 sides, Cetra-Soria Set 112. \$4.73. Slow arias by Monteverdi, Verdi, and Weber sung with sobriety and good taste, Italian style. Limited range recording, particularly noticeable on orchestral background. Some surface noise.

Interpretation AA

Fidelity of Recording B

Esio Pinza in Popular Italian Songs (bass). 6 sides, Columbia Set 768. \$3.90. Off the beaten path, lively, folksy pieces which Pinza sings robustly. But will they stand frequent bearing? Rich reproduction.

Interpretation AA

Fidelity of Recording AA

Ravel: *L'Enfant et les Sortilèges.* Cast of 11 French singers, Orchestre National, Choir of La Radiodiffusion française, under Bour (11 sides) & **Debussy:** *Arabesque No. 1.* John Cockerill (harp) (1 side). Columbia Set MOP 29. \$8.50. Amiable, resourceful one act fantasy sung in French. I can conceive of slightly sharper characterization but this minor shortcoming is outweighed by the fine style and the obviously careful artistic preparation. Recording possesses adequate range, little depth, and favors the voice.

Interpretation AA

Fidelity of Recording B

Thomson: *Four Saints in Three Acts* (abridged). Soloists, Chorus and Orchestra under the Composer. 10 sides, RCA Victor Set 1244. \$7.25. Gay, modern opera with a curious "double talk" libretto by Gertrude Stein. Not among the first sets I would acquire though some may consider it a "must" in their collection of modern vocal works. Definitive performance by substantially the original 1934 Negro cast. Bright recording with mike near singers yet satisfactory depth overall.

Interpretation AA

Fidelity of Recording AA

Wagner: *Five Songs.* Eileen Farrell (soprano) with Stokowski and His Orchestra. 6 sides, RCA Victor Set 1233. \$4.75. Only recording of the five Mathilde Wesendonck poems which Wagner set to music. Traubel and Lehmann have recorded excerpts. Although, at times, young Miss Farrell's tone is unsteady and tremolo bedeviled and her diction is not clear, she does a creditable job. Stokowski gives her firm support. Warm, wide range recording. Some surface noise.

Interpretation A

Fidelity of Recording AA

RECOMMENDED SINGLE DISKS

COLUMBIA: Huddersfield Choral Society on C 72733 — Francescatti on C 17560 — Stignani on C 72727 — Philharmonia Orch. and Chorus on C 72707. **VICTOR:** Royal Philharmonic Orch. and Chorus on V 12-0584 — Anderson on V 12-0580 — Stokowski and His Symphony Orch. on V 12-0585 — Boston Symphony Orch. on V 12-0288.

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